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THE

CHIRURGICAL CANDIDATE;

OR,

REFLECTIONS ON EDUCATION:

INDISPENSABLE TO COMPLETE

NAVAL, MILITARY, AND OTHER SURGEONS.

The Manner of obtaining an Appointment in either Service is shewn: Remarks on the most eligible, and their several Advantages. The Duties of Surgeons and Assistants in His Majesty's General and Regimental Hospitals—in the Field—and in Ships of War, &c. are clearly pointed out. *A Plan is added, entirely new,* for the Extirpation altogether of the Yellow Fever, so fatal to Europeans in the West Indies.——Accompanied with

Philosophical Observations on Climates, to which some Diseases appear to be peculiar, and to which Troops are mostly liable, particularly at the Commencement of Campaigns;—and on various Subjects.

BY

CHARLES DUNNE,

MEMBER OF THE ROYAL COLLEGE OF SURGEONS IN LONDON—SURGEON IN CHIEF OF THE MEDICAL STAFF ON THE GOLD COAST OF AFRICA—FORMERLY SURGEON TO THE AUXILIARY CAVALRY SERVING IN PORTUGAL—OF THE MEDICAL STAFF WEST INDIES—AND LATE OF HIS MAJESTY'S ROYAL NAVY.

Humanitas vetat superbum esse adversus socios, vetat avarum.

SENECA.

DEDICATED, BY PERMISSION, TO

HIS ROYAL HIGHNESS THE PRINCE OF WALES.

LONDON:

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1808.

TO HIS ROYAL HIGHNESS

GEORGE, PRINCE OF WALES.

SIR,

THE high and distinguished honour of having the name of your Royal Highness appear to works of literature, must at all times be grateful to their authors. In this instance, your gracious condescension in permitting it to hold a place here, no less from the manner in which that honour was conferred, than from its value and importance; whilst it displays the lustre of your character, as the patron of science and the arts, commands my profound acknowledgment and gratitude.

The tender of this work I make to the public under your august sanction, emanates in no inconsiderable degree from a principle actuated for the general good. It is an humble offering of my mite to the stock of medical and chirurgical knowledge, for the benefit of my fellow-creature man. It will embrace many of the most prominent topics that concern his well-being; and

whilst it aims at alleviating, if not removing, some of the most destructive afflictions that befal his nature, will also attempt to rescue from the grasp of the unlearned and unworthy, a profession that should stand eminent in the consideration of the world.

With objects like these in view, and means pointed out in the following sheets to accomplish them, I found my earnest pretensions to your auspices; influenced by the sentiment, and indulging the opinion, that as far as it will merit your regard, it will continue to enjoy your favour and protection; solicitous, it is true, of such exalted support, but desirous also to deserve it.

With every sense of duty and gratitude,

I am, Sir,

Your Royal Highness's devoted Servant,

CHARLES DUNNE.

HAMMERSMITH,
January 23, 1808.

BOOK XI.

Page

Philosophical observations continued—the diseases of soldiers in all climates may be avoided—marshes—the commencement of campaigns most unhealthy—bites and stings of various animals and insects - - - - - - - - - - - - - - - 185

BOOK XII.

Philosophical observations continued—the learned Dr. Mead—influence of the celestial bodies—Barbary—putrid exhalations—vapours—the earth—the continent—springs—exhalations from the sea—dew—the sea-water—inhabitants of the deep—the medicinal waters of Jamaica, of England, Scotland, and Ireland, of Naples, Italy, Hungary, France, Germany, and the Lake of Mexico - - - - - - - - - - - - - - - 189

ADVERTISEMENT.

On account of the author's absence from town, and being under orders for embarkation at a moment's notice, he was deprived the opportunity of seeing the work before the whole was thrown off, and a few errors have unfortunately crept in: it is hoped, however, that a generous public will pardon the inaccuracies.

THE

CHIRURGICAL CANDIDATE;

OR,

REFLECTIONS ON EDUCATION:

INDISPENSABLE TO COMPLETE

NAVAL, MILITARY, AND OTHER SURGEONS.

PREFACE.

It is a point yet unsettled by philosophers, whether man, unassisted and uninformed by the society of his own species, would arrive at a higher degree of understanding than brutes. A celebrated noble lord, in a treatise which shews much erudition, appeals to the judgment of his readers, whether, so immersed as the mind is in matter, without the assistance of language, or those reciprocal aids which in refined society we borrow from each other, there be any difference between us and other animals? He maintains, that, from the force of their memory and perceptions, they have, like ourselves, a notion of sameness, likeness, and diversity in the objects of sense; and they recognise the species in the individual, as our children do. "All which indicates," he says, "that there is no natural difference betwixt our minds and theirs, and that the superiority we have over them is adventitious and from acquired habit." The equality between them and us is therefore very evident so far, and our

present superiority over them is as much the effect of chance as any thing else.

I know it may be said, that every animal under our notice seems to have arrived at the summit of that perfection which was the original design of nature. But man, if in a totally uncultivated state, is extremely imperfect, and seems to rise in the scale of excellence only in proportion to the degree of instruction bestowed upon him. Witness the disparity between any two men of equal capacities, one of whom enjoys all the advantages of a liberal education, the other having few opportunities of enlarging and improving his ideas. Then let us observe the state of a clown, who, from his infancy, has been totally confined to labour: from such a person then descend to the lowest scale of intellectual deficiency, to those beings of our own species (several of whom history mentions) who have been deprived from their infancy of all intercourse with human kind; and it will be found, that they are always spoken of as incapable of flying to those resources, which nature, more kind to other animals, has instinctively pointed out to them for their immediate good and preservation.

The various characters and appearances which men assume from the different examples set

before them, afford the strongest proof how much we are mere children of *education*. How difficult sometimes it is for us, from the imitative quality so peculiar to our nature, to be divested of the most absurd prejudices; and, without the guidance of example and precept, even to discover the power of exercising the mental faculties!

Our superiority to other animals therefore appears to rise in proportion to the degree of care and pains taken to obtain it: men, viewed as savages, living for ages like other animals, acquiring improvements by the slowest steps; first having recourse to motion and sounds, by way of vehicles of thought, then proceeding to articulation and language.

With respect therefore to the nature of man, our own experience; the whole tribes of men, for many generations, compared with other animals, before civilization was introduced; the actual progress we are now making in arts and sciences, wherein our ancestors, perhaps, thought themselves equally expert: all, or any such examples, are sufficient to demonstrate, that man, in a totally rude and savage state, is scarcely superior to the brutes.

From what causes it can have proceeded, that "all ages have not been equally fertile in

men of genius;" that "the most eminent persons in all kinds of professions have been always contemporaries, flourishing in the same period, which has been of short duration;" that "arts and sciences should at some times have risen almost spontaneously, and at others have declined, notwithstanding every assistance and encouragement for their support," have been matter of wonder and subjects of enquiry with speculative minds, from Paterculus to the Abbé du Bos. The former says, "it is the consequence of a frequent and fickle transition from one art to another, and the which is the greatest obstacle to perfection."

The Abbé du Bos remarks, that "there seems to be a peculiar time in which a certain spirit of perfection sheds itself on the inhabitants of a particular country;" and "that this same spirit seems to withdraw itself, after having rendered two or three generations more perfect than the preceding or following ones." He ascribes this phenomenon partly to moral, but more to physical causes. He allows, that the happy situation of a country, the encouragement given by fellow citizens, and the means of instruction offered to men of genius, have a great share in the sensible difference there is between different ages of the same

country; but he plainly appears to think, that physical causes have more powerful influence than moral, in producing the amazing difference we observe between the state of arts and sciences in two succeeding ages. "Have we reason," he says, "to believe that there are times in which men of the same country are born with greater capacity and wit than at other times?" This opinion he supports by proofs drawn from the history of poets and artists, and by philosophical reflections on the effects of climates, aliment and air, on the human body and human mind. He concludes his reflections on the revolutions of learning and barbarism, with a thought becoming a pious and resigned mind: "It is a consequence of the plan adopted by the Creator, and of the means he has chosen for its execution."

It is a matter of surprise, that, amongst the numerous writers who have so ably distinguished themselves in the field of literature for so many centuries past, none have written on the education necessary to complete chirurgeons*, either those intended for the military or naval

* Surgery was introduced at Rome in the time of Hannibal, upwards of two hundred years before the coming of Christ; and Homer's surgeons dress his wounded heroes most scientifically.

service, or private practice. Perhaps this defect may have proceeded from an opinion, that no system of education was requisite, the general plan of apprenticeship being universally resorted to.

The erroneousness of this opinion, however, will be readily granted by every person, who, for a moment, reflects on the great advantages that would result to society from a contrary plan of education; which, I trust, is pretty satisfactorily proved in the Introduction, part the third.

"We should no more trust to the skill of most apothecaries," said a celebrated author, "than we should ask the opinion of their pestle and mortar; yet both are useful in their way." —The folly and impropriety of apprenticing young gentlemen intended for the profession of chirurgery to such persons, must, to any reasonable mind, appear truly manifest: besides, it is impossible that youth apprenticed for five or seven years to such ignorant beings as apothecaries* generally are, can ever acquire the manners of gentlemen, so essential to surgeons

* All persons calling themselves surgeons who sell medicines, are to be considered in reality nothing but apothecaries, and ought not to be by any means entitled to the rank of surgeon.

in their professional pursuit, whether in the army*, the navy, or in private practice. I contend, that even were it to be admitted that if a young man had received and brought with him a classical education to the house of a hero of the pestle and mortar, his manners yet would very shortly dwindle into the sulky shopman, and the miserable grinder of drugs, pill and bolus-maker.

Why should not gentlemen intended for the profession of chirurgery be educated at one of the universities? Surely they would have a better opportunity of acquiring knowledge of anatomy, chemistry, and the materia medica (which indeed are the basis of physic and groundwork of medical surgery), than they could obtain behind the counter of an obscure apothecary or barber surgeon†. Our legislators would deserve well of their country by having

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* I omitted in its due place in the body of the work, the staff of the Royal Artillery: it is admirably regulated, and an eligible pleasant service. It is worthy of notice, that no person is employed in their medical department who is not a member of the Royal College of Surgeons in London. Sir John Hayes, Bart. is their inspector general of hospitals; a gentleman of erudition and elegant manners, well worthy to fill this important station.

† Many persons of this description write over their doors, "*Surgeon, apothecary, and man-midwife.*" To this others add, "N.B. *Cupping and teeth-drawing, on new principles, with ease and safety.*"

established a regular system of chirurgical education: government would thereby benefit very considerably by the saving that would follow of so many lives, as well in private as in the military and naval service; even if men were only calculated at so much per head, without taking humanity into the scale. Ignorant persons would not find their way into the profession, and empirics would be completely annihilated.

"Whatever may be the merits of the English in other sciences," says Dr. Goldsmith, "they seem peculiarly excellent in the art of healing. There is scarcely a disorder incident to humanity, against which our advertising doctors are not possessed with a most infallible antidote. The professors of other arts confess the inevitable intricacy of things, talk with some doubt, and decide with hesitation: but doubting is entirely unknown in medicine; the advertising professors here delight in cases of difficulty: be the disorder never so desperate or radical, you will find numbers in every street, who, by levelling a pill at the part affected, promise a certain cure, without loss of time, hinderance of business, or knowledge of a bedfellow."

"When I consider," he says, "the assiduity

of this profession, their benevolence amazes me: they not only give their medicines for half value, but use the most persuasive remonstrances to induce the sick to come and be cured. Sure there must be something strangely obstinate in an English patient, who refuses so much health on such easy terms! otherwise he would never reject such repeated assurances of instant relief. What can be more seducing than the manner in which the sick are invited to be well? The doctor solemnly affirms the pills were never found to want success; he produces a list of those who have been rescued from the grave by taking them. Yet, notwithstanding all this, there are many here who now and then think proper to be sick:---only sick did I say? there are some who even think proper *to die;* yes, by the head of Confucius! *they die*, though they might have purchased the health-restoring specific for half-a-crown at every corner!"

"I can never enough admire," continues the doctor, "the sagacity of this country for the encouragement given to the professors of this art: with what indulgence does she foster up those of her own growth*, and kindly cherish

* It is a notorious fact, that an old woman, the widow of a barber, who has resided many years in the vicinity of Fleet market, with this

those who come from abroad! Here every great exotic strikes root as soon as imported, and feels the general beam of favour; while the mighty metropolis*, like one vast magnificent dunghill, receives them indiscriminately to her breast, and supplies each with more than native nourishment."

It is truly lamentable to see so many base quacks fostered in this country under the wing of our government, for the sake of the revenue produced by stamps. It is equally to be lamented, that so many persons should be employed in the medical departments of the army and navy, so preposterously ignorant of the profession of chirurgery, indeed of the rudiments of their own language. As this subject is fully treated in the Introduction, more need not be said on it here. What appears to me, nevertheless, very astonishing, is, that many empirics write over their door, "*Surgeon*," without any legal qualification whatever, and that too in

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inscription on her door, "*Surgeon-dentist*," actually draws teeth, performs the operation of V. S. and undertakes to cure a certain fashionable disease in both sexes—*secundum artem*.

* London, according to Dr. Johnson, is the sink of Paris and of Rome:—he might have added, and of Germany!

the very vicinity of the Royal College of Surgeons: this appears to me inexplicable. Other worthless beings, who, by some stratagem, have obtained the college diploma, advertise to the manifest prejudice of the profession. Surely it would be no more than justice in the college to suppress altogether the machinations of these vile dogmatic impostors, more especially as they are fully empowered so to do by the sixth section of their bye-laws, sanctioned by their charter*.

Respecting diseases, whatever is here offered is deduced from practice, never having suffered myself to be governed by theory where actual danger presented itself; and I can assert, that not one circumstance is mentioned in regard to preventives, diseases of troops in camps and garrisons, in the Western Hemisphere, and this country, on the authority of any man, without having first proved it by my own experience.

Wherever I have met with any sentiment that strictly coincided with the subect, I have paid

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* See the recent case in the Court of King's Bench, of a Mr. Campbell prosecuted and convicted for practising in London as a physician without licence from the Royal College of Physicians, which is applicable.

the author the compliment he so justly deserved, of putting it in his own words, rather than making choice of others: and if any person should feel disposed to take exceptions, or think himself disappointed, I beg leave, by way of reconciliation, to refer him to the two lines from SENECA at the beginning of the first book of this work.

CONTENTS.

INTRODUCTION.

Page

On the impropriety of parents neglecting the education of their children—Crates—infants found in woods nourished by wolves—the ape—learning—the answer of Socrates on being asked his opinion of the king of Persia's happiness—Cicero—Locke—the interpreter of Sultan Soliman—the present chancellor of the exchequer's thoughts on education—a singular character 1

PART II.

On the neglect of those parents who do not, in due time, make choice of some employment for their children, so that they may become useful members of the state—an example of Lycurgus—civil government—medical chirurgery - - - - - - 11

PART III.

On the absolute necessity of well-educating naval and military medical officers, and on the defect of medical education in general in his majesty's dominions, with some hints to redress this grievance, &c.—the modern Military College—legislators—soldiers—surgeons ought to receive a college education—a lob-lolly-boy—an ancient college in Scotland—M. D. reversed D. M. explained—men of rank prostituting their names—ignorance of a medical practitioner—Maupertuis—medical topography—West Indies—boards of health recommended—the ingenious Dr. George Pearson—the impropriety of boys practising medicine in the Torrid Zone—Mr. Windham—great mortality in 1801—vanity—the oracle of Delphos—erudition and elegant manners—pride and affectation—Diogenes—arrogance - - - 17

ON CHIRURGICAL EDUCATION.

BOOK I.

Page

Observations on chirurgical education—empirics—physicians—surgeons—apothecaries—druggists—chemists—accouchcurs—fines—a military surgeon—dress—biographical sketches—Dr. Harness—music—Otway—drawing—fencing—classical learning, what?—Oxford—Cambridge—writers and lecturers, &c. on anatomy, surgery, and medicine—the expence attending their several lectures, &c.—the languages considered—a diploma—fees—War-Office—examiners at the College of Surgeons, at the Army Medical Board, and the Transport Office—deputy purveyors—hospital mates—Mr. Knight—Mr. Keate—Sir Lucas Pepys—a voyage to the West Indies—Barbadoes—medical officers' pay—out-fit money—travelling expences—baggage—library—portable cot - - - - - - - - - - - - - - 35

BOOK II.

Observations on general military hospitals—duties of medical officers in general hospitals, in regimental hospitals—invoice of medicine for a full regimental chest—hospital utensils and necessaries—instruments—fumigation - - - - - - - - - 59

BOOK III.

On the duties of naval surgeons, assistants, and servants—Apothecaries' Hall—Dr. Beard—method of fumigating his majesty's ships—three months' supply—Dr. Hope and Mr. Vance, of the Royal Hospital at Haslar—Plymouth Hospital—his majesty's regulations for increasing the advantages, and improving the situation, of the medical officers of the army—particulars of such part of his majesty's order in council of the 23d January, 1805, for improving the situation of the medical officers of the royal navy, as relate to the hospital department—military medical officers' uniform—naval medical officers' uniform—rules, &c. which ought to be strictly attended to by troops and others embarked in transports, destined for foreign service - - - - 75

BOOK IV.

Page

Preparation necessarily to be observed when crossing the Atlantic Ocean, for the purpose of assimilating the body to tropical climates—reflections on the utility of wearing flannel in the Western Hemisphere--on the anointing the bodies of troops and others with sweet oil on arrival in warm latitudes—the coolics in Tunis - 113

BOOK V.

Reflections on the arrival of troops in the Western Hemisphere, with observations on their disembarking, quartering, barracks, encampments, &c.—plan for ascertaining and investigating diseases—the immortal Cullen—wine a valuable cordial - - - 119

BOOK VI.

HYGIENE; or, REFLECTIONS on the NON-NATURALS: comprehending air, meat and drink, sleep and watching, motion and rest, retention and excretion, and the affections of the mind—Hippocrates—an alderman--Colonel Pattepan--the atmosphere; how the asthmatic are affected by its levity; a common error respecting it—lime-juice, wine, porter, and fruit certain preventives to the scurvy, will also cure it in its worst stage—acidum vitriolicum aromaticum—a certain and safe method of carrying off the bile when too redundant—Dr. Fowler's solution of arsenic recommended for the cure of obstinate periodical headachs; the manner of preparing it agreeably to the doctor's formulæ - 129

BOOK VII.

PROPHYLACTIC REGIMEN; or, RULES to be observed, and strictly adhered to, by all Persons visiting TROPICAL CLIMATES, being a certain Preventive to the YELLOW FEVER—cholera, dysentery, tetanus, &c.—case of Mr. Lyon Myers—Dr. Pearson's opinion of the yellow fever—his plan of prevention—calomel and Dr. James's powders—Dr. Chisholm - - 145

BOOK VIII.

Page

Philosophical observations on climates, and an enumeration of diseases peculiar to each, and to which troops are on their first landing mostly liable—Montesquieu—the hot-bed-raised nobility of Great Britain—a climate, what?—Monsieur Bernier—a law of Mahomet—drunkenness - - - - - - - - - - - 161

BOOK IX.

Philosophical observations continued—the seasons—geography a necessary part of education—the diseases of troops may be prevented by well-educated officers—a great personage—a mushroom general—a black inspector of hospitals—diseases peculiar to one climate rarely met with in another—the black vomit—Spain—the Mediterranean—water-gruel and blood-letting—Naval Surgeon Watherstone—Portugal—virulent opthalmia—*Florentini ciechi*—Italy—Egypt—the Nile—South America—the Minorca transport—want of cleanliness a remote cause of opthalmia—Holland supposed to be unhealthy—marsh effluvia produce many diseases yet unknown to us—fatal dysentery among the Prussian troops in Holland—Goldsmith's admirable stanza - - - - - - - - - - - - - - - - - - - 167

BOOK X.

Philosophical observations continued--Herodotus--the Greeks and primitive Romans—Palestine—the Lombards—the plague—the Turks--suicide--the putrid and pestilential fevers of Grand Cairo, of Alexandria, of Greece, of Syria, the southern part of Africa, of Java—the British settlements on the Gold Coast of Africa—the committee of merchants trading to Africa—sea and land breezes—the fever of the West Indies never turns out a true plague—fever, dysentery, and cholera are epidemic throughout June, July, and August in tropical climates—April and May are rainy months in Jamaica—the Buccaneers' method of curing their sick—great mortality amongst the British troops in the West Indies—the United Kingdom, &c. liable to pestilential fever; why it appears so seldom—the bile, its influence on the human constitution; Dr. Huck's method of evacuating it 177

ON

GENERAL EDUCATION.

INTRODUCTION.

Φιλιας μεγιστος δεσμος αι τεκνων γοναι. Incert. Auct. Poet. Min.

Sunt vinculum amoris liberi firmissimum.

REFLECTION I.

ON THE IMPROPRIETY OF PARENTS NEGLECTING THE EDUCATION OF THEIR CHILDREN.

A COUNTRY cannot exist without citizens. To form these is not the work of a day; and to have them men of science, we must instruct them when children. "In every great and prosperous country, from time immemorial, general education has been discerned to be of the utmost importance. In a country where ignorance prevails, the natives are more mischievous, abandoned, and wicked; and it is only the effects of a good education that prevent the great depravation of public morals and heavy burthens to society."

Crates, the ancient philosopher, frequently said, that if he could be universally heard from an eminence, he would make this proclamation thence: "What mean you, fellow citizens, that you thus turn every stone to scrape wealth together, and take so little care of your children, to whom you must one day relinquish all!" Parents should consider, that it is equally incumbent on them to give their children a good education, as it is to find them in food and raiment. Can a man profess himself to be a good father, and pretend to parental affection, that uses his child like a trinket—brings him up to pomp of habit, luxurious living, and a series of new pleasures—swells his juvenile breast with pride and expectations of what he is born to,—yet neglect the most important part of his kindness, a good education? How many parents there are that commit this act of impiety! They idolize their money, and are so extremely avaricious, they prefer bringing up their children in cheap ignorance (though so contrary to the law of humanity), rather than pay proper masters. Can such men deserve the name of fathers, who are more happy in gratifying themselves and acquaintances in the most ridiculous trifles, than paying that due attention to have their children properly educated,

without which they never can become useful members of society.

The mind is strengthened by knowledge, and improved by education; and as men are only distinguished from the vulgar by their education and manners, it is a matter of surprise to see so many parents, in good circumstances, neglect that alone which raises their children to the dignity of being called rational creatures.

The utility, and indeed necessity, of well educating young people, may be readily conceived; without this acquirement, the human species will differ but little from the brute. The many infants that have been found in forests and woods, nourished by wolves, living among bears and other beasts, are striking proofs of this position.—We come into the world without the least idea of any thing; our soul is as blank as paper: we have not the least apprehension of what surrounds us: our notions are none; our wants, hunger and thirst; our language, the cry of nature. Were we to be left to ourselves in such a situation, we should grow up in common with brutes, not differing in the least from them.

The ape, that so much resembles man, and indeed claims kindred to him from his outward shape, has so little courage as to run

away from a snail, and will ruefully and frightfully look back to see if the snail follows. Incentives to learning would be unnecessary, were we for a moment to reflect on the figure we should make in the world without that accomplishment; and I am convinced we should not be a remove from the animal I have just mentioned, were we left solely to nature. We need only cast our eyes around, and view how much the gentleman is improved by being a scholar; how the labour of a few years' erudition gives him a pre-eminence over the vulgar part of mankind, independent of the advantages he stands possessed of, and which will stay by him to his last moments. Happy fathers, who, in your dying moments, can call to your failing arms your children, and say, in pressing them to your bosom, "Farewell, my children! I leave you possessed of a good and virtuous education;—and yet more happy children, who have been blessed with such parents!" With what happiness and content must fathers quit the world, when they reflect on the exalted notions their children must have acquired of the Divine Being's omnipotence and indulgence to man, the consequence of the liberal education bestowed on them!

What a wide scene of nature and her opera-

tions is opened to the scholar's view!—with what admiration and delight he must view her beauties!—how exquisitely his taste for enjoyment must be refined!—and how capable he is of granting admiration, and being charmed in his turn with communicated knowledge! I will grant, nevertheless, that riches, pomp, and state can make us the idols of an unthinking crowd, and consequently procure us a customary respect; but it is knowledge and learning alone that recommend us to the love, esteem, and protection of the superior classes of our species, who admire the merit of our understanding more than the advantages of birth and fortune.

Learning alone of all things in our possession is immortal and divine. Understanding and reason are two things said to be peculiar to human nature: the former is the master of the latter; and, consequently, the latter the servant of the former. These are impregnable against all assaults of fortune—not to be wrested from us by false accusations, impaired by sickness, or enfeebled by old age. The understanding always grows youthful by the hand of time; that which decayeth all other things increases knowledge in us. Plunderers may rob us of our wealth, the tyrant of our liberty and our

lands, our libraries may become the prey of some vile machinations; but that chance which defrauds us of our books, cannot deprive us of the advantages we have derived from our former resort to them.

The answer of Socrates on this subject to Georgias, who asked his opinion of the king of Persia's happiness, is worthy of remark. In his reply he said, "I cannot tell what to think of him, because I know not how well he is furnished with virtue and learning." Conceiving that human felicity consisted in those endowments, and not in those that are subject to the whim and caprice of fortune. Learning will be found our principal companion, and the only assistant to be relied on in the hour of danger, in every circumstance, clime, and age. "These studies," said Cicero, "are the ornaments of our prosperity, comfort in adversity, our chief pleasure when at home, and never impede our avocations when abroad. They watch with us at night, are our companions in our travels, and our amusements in the country. They will cherish us in our youth, and delight us in old age." It is, nevertheless, commendable in a man possessing every possible quality, and however great his capacity and understanding, that he should possess modesty, and not arro-

gate to himself any air of superiority over those persons with whom he is obliged to associate, and to divest himself of that affectation too often to be met with in the pedantic scholar. Much depends on the choice of a tutor; the child's improvement, good or bad qualities, chiefly depend on the selection of a proper master. He should read tempers as well as books, and be able to study his pupils' inclinations; should know how to adapt the classes to the genius, and not persist in thwarting the student with reading Homer or Horace, when Demosthenes, or Cæsar's Commentaries, would be found more pleasing, and equally instructive. If curiosity, however, would lead him to the summit of the golden language, certainly Horace and Juvenal, among the poets, should be early studied; Cicero and Livy, the former an orator, the latter an historian. Pliny's Letters too are worthy of notice. We should endeavour to understand our author's language; make ourselves master of his sentiments; enter into his spirit, wit, design, and disposition; fully to enquire into the principles and morality he advances, and if good, make them standards for our own private imitation.

Although the immortal Locke is of opinion, that Latin and the languages are the least part

of a child's education; yet, with great deference to that sublime author, I think youth can never be overstocked with too many languages, particularly those intended for superior stations in life. If this study is omitted until men arrive at a certain climacteric, it will be found almost impossible ever for them to persevere in it. The soul is not capable of receiving deep impressions but when the memory is fresh, quick, and fit for study; when the mind and heart are void of passions, cares, and desires; and when those who have a right to dispose of us, design us for long and painful labours. I am persuaded, that the few scholars, and the many superficial ones, are in a great measure the consequences of neglecting this practice, which is every day too evident.

It will be admitted, that languages are the keys to science: those that despise one, most certainly slight the other. Mithridates, king of Pontus, understood twenty-two tongues, which was the number of different people over whom he commanded. He knew those languages so well, that he could harangue each of his people in their own tongue. "So many languages as a man understands," said an English monarch, "so many times he is man." The interpreter of Sultan Soliman perfectly understood and

spoke seventeen different languages. But among the moderns, none have equalled Postellus, who had not only a perfect knowledge of the dead languages, but was so well acquainted with the living, that he could, without the assistance of an interpreter, have made the tour of the world.

Learning, however great and serviceable, is not, nevertheless, of such importance to every individual. It is degrading to a gentleman of birth and fortune not to be well acquainted with polite literature, but it is a very excusable defect in him who is designed for a trade. Of what use can it be to the mechanic to learn the Greek and Latin languages, and perhaps to neglect writing a good hand, and casting accompts, which are not only indispensable, but of the utmost advantage in every station of life*?

There are many who are unwilling to be

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* The present chancellor of the exchequer, however, thinks differently, if his veracity is to be relied on. He declared in the House of Commons, when the necessity of a general education was urged by Mr. Whitbread, "that education would disqualify the persons possessing it from the most necessary and useful description of labour:" and instanced Quakers, who were all well educated; "but never did he meet with an agricultural Quaker!" He observed, the poor of this country had an interest in the maintenance of its constitution and independence, which the people of no other country had: and the way I suppose he would keep us in a state of independence is, by keeping us in a state of ignorance!!! What miserable reasoning for a chancellor!

ignorant of any sort of learning, and masters of none—fonder of knowing much, than knowing well—and had much rather have a superficial knowledge in many sciences, than to dive profoundly into any single one. Such persons, however, every where meet with masters to reclaim them, are bubbles to their own vain curiosity, and can but seldom extricate themselves from the painful necessity of acknowledging their ignorance when minutely examined on any particular science*. Many, notwithstanding, have the key to science, but never enter themselves; their lives are spent in learning remote and useless matter. They read histories, are acquainted with all historians, yet know nothing of history; read all books, but are not in the least the wiser for any. They imbibe false principles, draw wrong conclusions: to be brief, their defect is ignorance of things; their rules consist of words and phrases, with which their memory is loaded, whilst their understanding is empty, uninformed, steril, and unfruitful.

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* I have known for several years a singular character of this description. He is a tolerable good figure, and possessed of so much effrontery, that he has imposed upon many hundreds by his specious mode of conversation; yet it is astonishing, that he is, without exception, the most illiterate ass in Europe: nevertheless, to make use of the words of a celebrated poet, "this genius pretends to every art and science."

PART II.

REFLECTION II.

ON THE NEGLECT OF THOSE PARENTS WHO DO NOT, IN DUE TIME, MAKE CHOICE OF SOME EMPLOYMENT FOR THEIR CHILDREN, SO THAT THEY MAY BECOME USEFUL MEMBERS OF THE STATE.

"Education is the best foundation of religion, morality, and industry."

LUSH. *Deb. in Parl.*

THAT youth is the time to lay the foundation, no one will deny. The memory is strong, and the body capable of application---the mind divested of the cares of the world---no hankering after power or interest, nor the habit infected with bad company. It may then be fairly presumed, that the mind of children should be early formed, and that it will for ever afterwards influence the rest of their lives. Lycurgus, in an assembly of the people, clearly demonstrated this truth by an example of two whelps of the same litter, but which were differently bred. Said the Lacedæmonian lawgiver, "This is pursuant to what I before told

you; for see, these two whelps do as they were bred, and although they are of the same litter, yet the diversity of breeding hath made one an excellent hound, and the other good for nothing."

The design of learning is, either to render a man an agreeable companion to himself, and teach him to support solitude with pleasure; or, if he is not born to an estate, to supply that defect, and furnish him with the means of getting one: for learning, whether speculative or practical, is, in popular or mixt governments, the natural source of wealth and honour.

The possibility of these sentiments is not only demonstrated by philosophy, but history herself furnishes us with a thousand striking examples. It is not the proper time to begin to make a change in our natural inclinations when at the grand climacteric, when our passions have already taken their bent, and habitude is joined to self-love. It is equally an improper time to attempt a change in our sentiments, or perhaps a reformation in our manners or mind, when once fixed in that selfish sentence, *mine*. A noble mind, when assisted by a good education, draws out to view every perfection and latent virtue, which might otherwise have been for ever concealed.

There are two distinguishing qualities which the virtuous citizen should ever possess: a zeal for the honour and pre-eminence of the state in his official conduct;—on all occasions, and in all transactions, an affection for his country. But I am not permitted to attack vulgar errors. The learned themselves respect prejudices too much to suffer patiently our supposed paradoxes. Not being able to change our ideas, and having a great respect for our present constitution, I shall be silent as the nature of my work will allow, on every subject whatever that bears the the least analogy to treating on the origin of societies*; what mankind has been first coming from the hand of the Creator; how we have deviated from our first situation: in a word, I shall be silent as to what we ought to be. I shall only speak of what we are, either in regard

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* Civil government and society originate in the wants and fears of individuals, who, being naturally free, equal, and independent, associate together, either by express or tacit consent, for the mutual preservation of their lives, liberties, and estates; on this fundamental principle, that the whole should protect all its parts, and that every part should pay obedience to the whole.

Individuals unite for mutual protection and benefit; and, therefore, the legislative and executive authority of government, originally derived from themselves, should be invariably directed to no other end but their safety and welfare: and that form of government is most eligible which is best adapted to these purposes.

to ourselves, to society, or mankind. What we are (I insist on it), we are by education. The latent powers of the human mind, awakened by education, are increased by the force of passion, which, in return, grows stronger by their activity. Our reason is perfected. We search for knowledge, because we wish for enjoyment; since it is impossible to conceive why those who feel neither desire nor fear, could give themselves the trouble of reasoning. Passions draw their origin from our wants, and their refinement from our learning; because no one can fear or wish for any thing, but according to the idea he may have of it.

To annihilate, or totally extinguish the passions of the human heart, as some philosophers have dreamed, would be rendering man as insensible as a tree. To rule them to the public utility, is the object of the laws; and to teach men to subjugate them, is the object of education.

I will admit, nevertheless, that education should, in every instance, be suited to the station and views of the parents; and, in a great measure, to the genius, constitutions, and inclinations of the children. Those should enjoy the benefit of the most liberal education who are destined to move in superior stations; and

they should also be furnished with every ornamental and useful accomplishment. Those intended for particular professions or employments, should be principally directed to those studies respectively to which they are appropriated.

Cicero very justly calls history "*magistra vitæ*," (De Orat. lib. 2. cap. 9.) as it teaches us both what we ought to pursue, and what we ought to avoid: it is, therefore, one of the first things that ought to be diligently studied by all descriptions of persons, from the king to the peasant, and from the first possible moment. Without this part of education, it is too evident the many dangers we are daily exposed to, the many evils we are likely to encounter, before we obtain the necessary information history alone can teach us.

If a kind of general education were to be established for the purpose of promulgating universal knowledge, and under rules prescribed by government, it would be the means of making our countrymen virtuous citizens. At present, men, born and bred up in a state of ignorance, cannot possibly have in their composition the smallest particle of the *amor patriæ* of the ancients. What love can a man have for a country from which he derives not the least

advantage! not even justice! for surely it is unjust to keep any part of our species in ignorance, for the purpose of making them slaves, or subservient to the others, when all came into the world free and independent.

Youth, brought up in the bosom of the state, would imbibe its laws and the genuine maxims of philanthropy; and, when grown up, become one day the brave defenders of the country of which they have been so long the children!

If society at large require so much care in being brought up, what must not be required, what means, what endeavours, and what efforts are to be left unemployed, for the education of those intended to pursue the abstruse, difficult, but most honourable employment, and that most advantageous to society? I mean *medical chirurgery*. As no science lays open a more extensive field of useful knowledge, it should be, consequently, from the earliest period, carefully cultivated.

PART III.

REFLECTION III.

ON THE ABSOLUTE NECESSITY OF WELL EDUCATING NAVAL AND MILITARY MEDICAL OFFICERS, AND ON THE DEFECT OF MEDICAL EDUCATION IN GENERAL IN HIS MAJESTY'S DOMINIONS, WITH SOME HINTS TO REDRESS THIS GRIEVANCE, &c.

Train up a child in the way he should go, and when he is old he will not depart from it.
PROV. xxii. 6.

IT were to be wished, that a kind of public medical education could be established on a plan something similar to our modern Military College near London. Such an undertaking would not only reflect high honour on the country, but would be the means, eventually, of saving the lives of many of our brave countrymen bred to arms. Indeed it would be at once rescuing the profession of chirurgery altogether from the hands of so many diabolical pretenders, and from that abyss of darkness, want of education, so fatal to medicine, and

in which, I lament to say, many of our present military and naval surgeons are deeply enveloped. Such medical pretenders daring to trifle with the lives of our fellow creatures, in a nation so enlightened as ours, especially the country practitioners, without any qualification or legal pretence whatever, is a crime so preposterous, that, on serious reflection, human nature must shudder at the idea; and I assert, our legislators cannot be fulfilling their duty with society, by suffering the continuance of such a grievance, that so loudly calls upon them for their interference.

The soldiers brought up at the establishment I have just mentioned, will (it may be easily conceived) imbibe that military enthusiasm for which Britons have been ever conspicuous. Why then should not military and naval surgeons be educated in a place equally appropriated? Surely, well educated surgeons are of more consequence to the state than sailors or soldiers. A good surgeon being present in an engagement by sea or land, is an incentive to the officers and men doing their duty. This is a fact that will not be denied by one who has himself been in action.

Their pursuits in learning, and indeed their education, should, nevertheless, be in a great

degree very different. The study of anatomy, botany, natural history, chemistry, physics, and indeed all the branches of philosophy, should be the ground-work of the surgeon; otherwise he cannot ever acquire a true philosopheme, without which he cannot fail appearing despicable wherever his professional avocations may require his presence. It is, nevertheless, very true, that sometimes the best and most liberal education is spoiled, and often remains during life steril and fruitless. But if the strains of a foolish youth make a man forget the wise lessons he early received, I will venture to say, that, whatever the inclination any person may have for vice, it will be very difficult, and I affirm it, almost impossible, that an education in which the heart has truly shared, can be for ever lost.

It cannot be denied, that a liberal education will free the mind from prejudices, fit it for the investigation of truth, put us in the habit of reasoning and judging properly, open an inexhaustible source for entertainment, smooth the way to the improvement of arts, and qualify men to act with propriety in the most important situations of life.

I have with great sorrow observed, that many unlettered and unworthy beings have, by some unaccountable accident, obtained situations of

great importance in the medical department of the army and navy, I lament to say, without either humanity or talents sufficient to qualify them for the most menial situation, much less to prescribe for sick in public hospitals. The fate of many of our brave veterans, placed under the care of such practitioners, if so they can be called, may be easily conceived by any one possessed of a single grain of common sense.

This should be avoided. None but men of tried and approved abilities should hold such situations; and even those should be rejected who did not acquire a college education. Humanity loudly calls upon the existing government of the country to use immediate and prompt measures in putting a stop to the empirical butchers of the present day. Is not society at large concerned? The revenue produced by stamp duties is certainly no excuse for the toleration of such infamy amongst persons who wish to be thought humanized; indeed in any civilized state, where the health of the subject is thought of more consequence than the paltry lucre drained from his blood!

In endeavouring, too, to point out many of the other evils in the department of medicine, I cannot pass over in silence the absurdity of employing such a number of raw apothecaries'

boys as hospital mates, or assistant surgeons, in his majesty's army or navy, whose whole education has been acquired, in the course of a year or two, behind the counter of some obscure apothecary or barber-surgeon; nay, in the cockpit of a man of war, as lob-lolly boy! Surely this ought to be discouraged; employing such ephemeral practitioners must be ruinous to the state, by depopulating the country of many of its brave defenders. Admitting for a moment that those pretended sons of Æsculapius have attended a course or two of lectures, nay fifty, they cannot be supposed to have acquired perfection, for want of education to comprehend one single idea correctly. They imbibe false principles, draw wrong conclusions; in a word, commit a thousand improprieties: yet these guilty pretenders conceive themselves justly and conscientiously qualified to practise physic or surgery, or both.

It is scarcely credible, but it is no less true, that a certain ancient college in Scotland absolutely promote this sort of wickedness; with whom it is to be hoped the legislature will one day or other interfere, and put a period to a scene so disgraceful to human nature. This august assemblage will grant any one a diploma, qualifying the holder to practise physic, although per-

haps he has never attended one course of lectures in his lifetime; nor indeed is it necessary for them to see any thing of their worthy licentiate, except his money*.

It would be absurd to make any comments on this plan of granting diplomas: I cannot, however, help observing, that those men obtaining them should be guarded against as impudent impostors and ignorant pretenders to physic, as I am confident no man of any qualification or abilities would accept of such a lasting mark of disgrace. Those ephemeral doctors should most certainly, not only be excluded from the society of the profession for ever, and for ever disabled from holding a commission in his majesty's service, but prevented, by the wisdom of our legislature, from assassinating our countrymen by the help of their deadly nostrums. It may be contended, that those men may obtain a true knowledge through a long series of practice: I deny it, for the reasons already mentioned. But admitting for a moment the claims of acquired merit to those tolerated, but intolerable quacks, how many must have fallen victims to their experiments and practice under the sanction of that ephemeral diploma, entitling them to place after their signatures that which only belongs to the

* £15.

well educated physician, and for whom only it was ever intended—*M. D.!* For those quacks, nevertheless, as they ought to be notorious, I think it might be fairly reversed thus—*D. M.*; branded with a hot iron on their forehead, and literally explained *dangerous man.* In this light I recommend them to every member of society; rich or otherwise, I am convinced that none of the sane human species will ever suffer themselves to be imposed upon by such miserable pretenders.

Would any man of common sense employ a quack in preference to a regularly bred physician? Surely not, although his nostrums might promise life everlasting. It is wonderful to hear of so many deaths daily happening in this metropolis, surrounded by so many of these wonderful doctors, each of whom (according to his own account) is in possession of a true nepenthe, as may be seen attested in all the newspapers, and witnessed by as many thousands*. Why do we suffer perjuries to be so openly committed,

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* It is really disgraceful for men of rank (who ought to possess a little common sense) to suffer their names and themselves to be prostituted by every vile empiric or base vender of quack medicines, and more especially the clergy. I have frequently seen in the newspapers a whole host of deacons, archdeacons, and even bishops, pledge themselves for the veracity of a common quack's *advertisement*!!

and our moral laws so grossly violated? Can it be the consequence of the revenue the stamps produce made use of by those wretched miscreants? Heaven forbid it! Were it so, we might then indeed be justly called a country of empirical impostors.

To avoid the many calamities the uneducated are daily exposed to, to encourage science, and to annihilate for ever ephemeral uneducated practitioners, is the intention of the first part of this work. The experienced medical gentleman too well knows the little regard that has been paid to the education of many of our surgeons in the army and navy. Instructors have failed, and mankind suffered. The ignorance of the parents themselves in making choice of an employment that the child may not have capacity to fulfil, the want of a knowledge of the expences attending the acquirement of such an employment, is one of the principal obstacles to be removed; to remedy which I have laid down plain and certain rules. The public utility is my stimulus, reason and experience my guide. I have taken the pupil from the earliest period; indeed I have begun with his parents: I have shewn them the proper path; I have fixed his studies; I have pointed out the established time it will require to be perfect in his profes-

sion, and to get his diploma; every expence attending the whole of his education, &c. I have mentioned the names of the most learned and approved men of science, literature, and professional talents, under whom he ought to be placed to excel in the profession. Gratitude demands of me to mention here my illustrious master, the ingenious Doctor Pearson, of Leicester-square. If I have any claim to merit in the knowledge of physic, the praise is due to him; he has been my instructor and my guide. The recollection of his many wise precepts fills my soul with the highest sentiment of gratitude and admiration: and I hope the reader will pardon me this small tribute of esteem, and the effusions of my heart towards a man to whom I am so much indebted. The high rank he enjoys in his profession, and the number of his pupils who have, by their merits, obtained important situations in the medical departments of his majesty's army and navy, is a due reward to his talents; and his talents the most proper apology for the great estimation in which he is held all over Europe, and even in the Western hemisphere.

The pupil having finished his studies, I have pointed out to him the manner of application to

obtain his diploma*, the expence attending it; and should a military life be his pursuit, I have shewn him the manner of application to obtain a commission. I have added his majesty's late regulations for the encouragement of learned persons to enter his service, which cannot but reflect high honour on Mr. Keate, the surgeon general of his majesty's army, and those gentlemen who laid the plan before the throne. It must be admitted, that the encouragement for well educated medical gentlemen to enter the service, was by no means adequate; which circumstance may, in some measure, account for the many illiterate† practitioners formerly to be met with in the military, and now in the naval service.

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* I recommend it to every gentleman to get a diploma in the first instance; it will be much better than to pass in the usual manner, first as an hospital mate or master surgeon, and afterwards regimental surgeon.

† I met with a medical practitioner in the West Indies, on the staff of the army, who could not but with great difficulty write his name: he could not copy general orders, being so extremely ignorant. Whilst I was serving at the royal hospital at Haslar, I met with an assistant surgeon of the royal navy there, who, on being ordered to write out the case of a sick man he brought from his ship, was under the necessity, after much controversy, to confess he could not write at all! This happened in presence of the senior physician, Doctor Hope, whose philanthropy, qualities as an able practitioner, and manners as a gentleman, pre-eminently distinguish him.

The great Maupertuis, whose name will be immortal, in one of his scientifical letters, speaking of medicine, proves the difficulty of acquiring a perfect knowledge of ascertaining and discriminating different diseases: and really I believe few will disagree with that great philosopher. It cannot be doubted, that to know truly the nature of a disease, is half the cure. Hippocrates himself confirms these ideas in a well known aphorism.

The treatise united to this work will, I trust, be found an auxiliary to the young surgeon in ascertaining and investigating diseases, especially those which are peculiar to camps and garrisons. The different parts of the world I have been in, enables me to state with confidence, that, of whatever efficacy medicine is in the cure of disease, it must be, nevertheless, often very differently applied to be successful, and particularly under the influence of different climates. To this the young practitioner should pay great regard. It is to be much lamented, that universal medical topography is not more encouraged and prosecuted by our medical men of science.

I have here presented the reflections my experience has furnished; but, from the plan of the work, I am limited to those foreign climates where our government is under the

necessity of keeping troops. Perhaps, if my public employment will grant me time properly to arrange some materials I have already in my possession, I shall present the public with five more volumes on the different branches of philosophy and medicine.

The West Indies being the most considerable British colonies in our possession, and where it will be ever absolutely necessary to keep a large force, and the more particularly whilst we are engaged in the present dreadful conflict against the conqueror of greater part of Europe, it is surprising that a disease already by name too well known from its dreadful effects, and its almost certain fatality to European troops in those regions (the grave of our bravest veterans), has not attracted the notice of our legislature, who might send out men of talent and experience to establish a *Board of Health* in each island, who should be obliged to correspond, by every opportunity that presented itself, with a certain committee of physicians that might be established in London*, and from

* The ingenious Dr. Pearson of Leicester-square, a chemist of the first class, analyzer of James's powder, discoverer of the soda phosphorata, is well qualified to be at the head of such board; and the result of his enquiries would unquestionably be of the utmost importance to the human species.

whom all the new and necessary theoretical knowledge might be acquired, which those placed in the Western hemisphere might from time to time put into practice. This, together with their own practical experience, might be the means of discovering some antidote against that dreadful malady, to which so many thousands have fallen victims* within a few years. The cause, symptoms, and cure of this plague, are but very superficially understood; a thick veil seems to hang over it: the natives themselves are as much divided in their opinions as the Europeans, both in accounting for the remote and proximate cause, as in the treatment, prevention, and cure. How is it then possible to suppose, that a boy, who has never been but a very short time from behind the counter of an apothecary, can be sufficiently qualified to practise physic in the torrid zone? Let boards of health be established; men of integrity, honour, and education, be sent thither; let no person prescribe for the sick but men of known abilities, and even those not for twelve months after their arrival in the West Indies, but in

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* Nearly 1300 "*died off*," to make use of Mr. Windham's phrase, within twelve months during my stay there. In 1801 upwards of 8000 troops died. In fact, I calculate the average deaths by the yellow fever about 600 men monthly.

cases of great emergency; and I affirm, that the loss to the state will not be in the proportion of one to ten as matters are at present conducted.

I have been there; I have been an eye-witness to many serious abuses having been committed by the inexperienced in the torrid zone. I have myself suffered by the evil I complain of. I have suffered severely from violent attacks of the fever in its most formidable shape; and for the want of proper medical assistance, had very nearly finished my career in that climate. Having, by divine assistance, escaped its claws, and seeing the ignorance that prevailed among every description of persons every where met with, I dedicated myself, immediately after my recovery, to the finding out some speedy means that might be relied on in the hour of danger, as generally a few hours carried off the patient, so swift is the disease in its progress. I have no reason to be dissatisfied with my success; and I am happy to state, that, according to my calculation of the experiments that have been made, they generally, and almost always, succeeded even beyond expectation. Animated with such success, and more acquainted with the disease itself, I have contrived a prophylactic regimen, which has been found equally successful.

I have added some brief observations on several parts of the globe I have traversed; and an enumeration of diseases peculiar to various climates, and to which troops are mostly liable both in camps and garrisons.

In order to render my work as useful as possible to young surgeons, as well as those visiting hot climates, I have added some reflections on the propriety of wearing flannel in the West Indies, it being a matter of much controversy; ---warm and cold bathing, whether in disease or health;---with a few general remarks on alkalies, acids,---on various tropical fruits,--- the effect of vital air on the human constitution,---night dews, marsh and human effluvia. Observations on the bile, so destructive when too redundant in the system, and its decomposition, &c.; with an enumeration of many of the medicinal waters found in Europe. A preparation necessarily to be observed when crossing the Atlantic Ocean, for the purpose of assimilating the body to tropical climates;--- instructions to troops on arrival in the West Indies;---duties of surgeons and hospital mates in general military and naval hospitals;---regulations for surgeons and assistants in regimental hospitals and in ships of war. The additional pay, by the late regulations of his majesty;---

travelling expences, --- out-fit money when ordered on foreign service, --- military and naval medical officers' new uniform,---increase of pay,---the appointed days of meeting for the Royal College of Surgeons, the Army Medical Board, and the Sick and Wounded, respectively for the examination of candidates.

It may not be unacceptable to the reader, having the care of youth intended for the profession of chirurgery, to know, in the first instance, the proper plan of education, and the expence attending it, requisite to perfectly qualify for a situation in the medical departments of the army and navy. I have subjoined a calculation, with the outlines that appeared to me best to be adapted. The pupil will be led progressively to the Royal College of Surgeons, where he will be examined, touching his knowledge in anatomy and surgery, prior to his getting a diploma or certificate of his being qualified to serve in the army or navy; and also the Army Medical Board and Board of Sick and Hurt: at which places he, according to the service he may prefer, will be lastly examined in physic; and if found fitly qualified, appointed to the situation of hospital mate, or assistant surgeon, in either service. It will be doubtless of great utility to gentlemen who may have

received appointments, and particularly if ordered on foreign service, to know the clothing, books; in short, the entire baggage each person should possess himself for any climate he may be ordered to: I have added a list of such articles as will be absolutely useful, and indeed indispensable, without encumbering him with many articles very expensive, and useless in hot climates.

The best mode of travelling to any part of his majesty's dominions by sea and land, is pointed out; and directions for the medical officer's comportment on arrival to join any staff, and his subsequent conduct when ordered for duty at the hospital. When I have taken my leave of him, at the same time impressing on his mind the necessity of temperance, an amiable disposition, strictest attention to his duty, and, above all things, obedience to his superiors.

I cannot conclude this subject without cautioning young surgeons against that vice, *vanity*, the most to be dreaded, and to which every other is subordinate, a rock upon which so many young men of the present day split. "Nature," said the oracle of Delphos, "makes many fools, but no coxcombs; the latter are always of their own making." It is truly laughable to see some of those animals on their first appearance in regimentals; nature, in her

whole drama, never drew such a being! A rational creature should possess to himself profit and pleasure by recreation and study. What entertainment on earth is more suitable to a reasonable mind than a perusal of good authors? How well this qualifies a man to be pleasing to his friends, and advantageous to the public! Reading is to the mind what exercise is to the body: health is preserved, strengthened, and invigorated by one; by the other virtue, which is the health of the mind, is kept alive, cherished, and confirmed. These are the only leading marks by which the gentleman of erudition and elegant manners can be discovered.

Pride and affectation belong to persons of the greatest ignorance, and their dress frequently points them out. Men of sound reasoning must view those fools in trappings with an eye of contempt. Wise men should be cautious not to imitate the extravagance of a blockhead; it is sinking beneath our proper level, and disgracing the dignity of our nature.

Diogenes having seen some Rhodian youths at Olympia magnificently dressed, said to himself, with a smile of contempt, "This is all arrogance!" Having afterwards observed some Lacedæmonians as meanly habited as the others were fine, "This," said he, "is another piece of arrogance!"

ON

CHIRURGICAL EDUCATION.

BOOK I.

OBSERVATIONS ON CHIRURGICAL EDUCATION. ANNIHILATION OF EMPIRICS, &c. &c.

Sed etiam si omnia à veteribus, inventa sunt: hoc semper novum erit, usus, et inventorum ab aliis scientia et dispositio.

SENECA.

FROM what has been said in the preceding pages, it will be readily admitted that surgeons ought to receive a liberal education, the lives of our fellow creatures being so often entrusted to their care. It is to be wondered at (as I have had occasion to observe in another place), that government does not have erected a college, with professors, for the sole purpose of educating surgeons for their service from the earliest possible period of their lives: it would be a prevention of the abuses already mentioned, and would be saving to the state many of its valuable members; indeed, the result from such an establishment may be readily conceived. In France, where surgeons are conspicuously emi-

nent in the profession, a plan something similar is adopted: why then should Englishmen suffer themselves to be excelled in humanity? as it is certainly a want of it if we do not endeavour to give our surgeons a good education, by which means alone they will be ever fully qualified to pursue the practice of their profession with safety to the lives of their countrymen, either in his majesty's service or in private life.

Empirics, I pronounce it, should be for ever totally annihilated, by being prosecuted as felons, or common knaves, at the expence of the several colleges; and every regularly qualified person, in whatever branch, selling or encouraging the sale of patent or quack medicines, to be struck off the list of whatever part of the profession he may belong to, and never again to be re-admitted, to pay a fine to the king of £500, and to be imprisoned till such is paid.

Physicians practising within the United Kingdom without a diploma from the Royal College of Physicians in London, should be obliged to pay a fine to the king of £50 for each patient he visits; and no one to be suffered to practise physic as a physician unless he is at least twenty-six years of age, and a graduate of some university of the United Kingdom. He ought at least to pass four years within the walls of the university, and study physic six

years afterwards in some school of notoriety in London or Dublin, and pay a stamp duty, on taking up his diploma, of £300.

Surgeons should also pass four years in some university in the United Kingdom; to be fourteen years of age at the time of admission; attend anatomical duties*, lectures on chemistry, physic, materia medica, pharmacy, &c. at least four years afterwards, in schools of great respectability in London or Dublin, and to pay a stamp duty, on taking out a diploma, of £200.

Apothecaries should serve an apprenticeship of five years in the shop of a qualified apothecary, and be at the time of being so apprenticed at least fourteen years of age; to have a perfect knowledge of the Latin language, and some acquaintance with Greek; to be examined, before being apprenticed, by the Apothecaries' Company: to pay a stamp duty on the indenture of £100; and before taking out a licence to practise for themselves on their own account, to attend lectures on chemistry, the materia medica, and pharmacy, for one whole year at the least; and, finally, to be examined by some board au-

* Messrs. Willson and Thomas, successors to the late celebrated Dr. Bailie, of Windmill-street, are conspicuously eminent as practical surgeons, and whose lectures on anatomy and surgery are universally admired.

thorized for that purpose; and not suffered by any means to prescribe for any patient whatever, if there is a possibility of finding a physician or surgeon within a short space of time to be called in. They ought not to make up medicine, unless in cases as above stated, but by the prescription of a regularly qualified physician or surgeon, under a penalty of five pounds for every such prescription, to be recovered by any person giving information, half to be paid the informer, the remainder to government.

Druggists should serve a regular apprenticeship of seven years, to pay a stamp duty on their indentures of £100, and to undergo an examination before they may set up for themselves; and under no pretence whatever to make up prescriptions, under a penalty of five pounds for each prescription: to be allowed to sell by wholesale only.

Chemists also should be placed under the same restrictions and penalties as druggists.

Accoucheurs should attend the anatomical lectures of a professor, teaching in the United Kingdom, for two years at least; and a professor of midwifery in the United Kingdom, one year afterwards; and to pay, before taking out a licence to practise for himself, a stamp duty of *fifty pounds*.

Persons not qualified, practising in either of the several branches heretofore mentioned or alluded to, vending, selling, or aiding others in so doing, to forfeit £100 each day during their continuance so to practise; and any qualified person employing any person not qualified, to forfeit the like sum daily for every day and for every person he may so employ as aforesaid.

The fines might be paid into the hands of a treasurer appointed for the purpose, and made a fund for the relief of the indigent in the profession, or laid out to some other advantage.

The stamp duties to go to the king, in lieu of the revenue produced at present by the stamps sold with quack or patent medicines.

A MILITARY SURGEON, in preference to all others, should not only acquire the qualifications I have mentioned, but should also possess accomplishments and personal appearance; he should be of a tolerable good stature, which is, in the language of a well known character, "a letter of recommendation:" he should at any rate be without distortion, and free from bodily and mental infirmity. What can look more wretched than a military medical officer, dressed in uniform, with a hunch on his back*, a large pair of spectacles

* A staff surgeon at the military hospital Gosport, about four feet ten inches in height, who had the vanity to always "buckle" a large

across his nose*, or a stammering or murdering every word he labours to express†! A good delivery, and an amiable disposition, are necessary ingredients to complete the medical gentleman‡. He will frequently, in his professional capacity, be obliged to condole with and solace his patients (in high life), and not always drench them with baskets of draughts, pills, and boluses.

Attention to dress, and very particularly to

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pair of epaulettes on his shoulders, the circumferencc of which, if mcasured, would about tally with his hcight. What a charming figure for uniform!

* A Gosport gentleman, who ncver had any qualification whatever, yet passed many years in the naval medical service at Haslar hospital. His eyes havc long sincc failed to perform their officc, and spcctacles themsclves have dcnied him assistaucc. An attempt was lately madc to have him superannuatcd, at the particular request of a certain inspector of hospitals: Spectacles, however, keeps his ground, although most certainly the baldness of his pate and furrowed cheeks give him a fair claim for superannuatiou.

† A son of Æsculapius, who has been for the last sixty years employed in the navy, army, and privatc practice: unluckily, however, it is too evidcnt he has made but a poor progrcss in his career; he is yet an hospital matc, grey in the service, and likely, very likely to continue in his present state. Indccd it cannot be wonderccl at when we reflect how difficult he finds it to makc himself understood; he is often ten minutes endcavouring to cxpress ouc sentence, and after all what he does say is unintelligible. Surely this to a man in the last stage of illness must be truly painful; bcsides the dclay occasioned thereby, whcn perhaps the instant nse of medicine is required.

‡ Dr. Harness, a commissioner for sick and wounded seamen, &c. is conspicuous for urbanity and elegance of manners, and justly cntitled to every eulogy of mine: he has a generous heart and a noble soul.

the cleanliness of his person, should be minutely attended to; which, I am very sorry to say, is seldom, if ever, thought of by the juniors in the department of medicine in the naval service.

A knowledge of mathematics, philosophy, astronomy, natural history, botany, chemistry, and logic, are also material, as the ideas will be assisted in true reasoning as well on medical subjects as those analogous.

An acquaintance with music cannot be otherwise than agreeable; it will be a passport to the society of the fair sex of fashion and elegance, without whose aid no man, let his talents be what they may, can ever receive a true polish, consequently, cannot be considered a well bred gentleman; which is strongly supported by the celebrated Otway*: and indeed, in my opinion, utterly incapaciated from attending in illness the most charming part of the creation.

Polybius too informs us, that music was necessary to soften the manners of the Arcadians, who lived in a cold gloomy country; that the inhabitants of Cynete, who slighted music, were the cruellest of all the Greeks, and

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* "O woman! lovely woman! nature made thee
"To temper man! We had been brutes without you;
"There is in you all that we believe of heaven."

that no other town was so immersed in luxury and debauch. Plato, Theophrastus, and Plutarch also agree with him in regard to the power and influence of music over the manners of the people. For this purpose music, which influences the mind by means of the corporeal organs, was extremely proper. It is said by Montesquieu to be a kind of a medium between the bodily exercises, that render men fierce and hardy, and speculative sciences, that render them unsociable and sour. Music certainly prevented in a great degree the effects of a savage institution, as wrestling and boxing, for which the Greeks were notorious, and enabled the soul to have such a share in the *education* as it could never have had without the assistance of harmony.

Let us suppose among ourselves a society of men so passionately fond of hunting as to make it their sole employment: these people would doubtless contract thereby a kind of rusticity and fierceness; but if they happened to receive a taste for music, we should quickly perceive a sensible difference in their customs and manners. In short, the exercises used by the Greeks excited only one kind of passions, viz. fierceness, anger, and cruelty; but music excites them all, and is able to inspire the soul with a

sense of pity, lenity, tenderness, and love. The three former all medical gentlemen should possess in the highest degree. Our moral writers, who declaim so vehemently against the stage, sufficiently demonstrate the power of music over the soul: besides, its well known influence on patients labouring under a certain malady, for which there is no other cure.

Every gentleman, and more particularly those who have a taste for writing, should be taught the art of drawing: it is indeed an accomplishment indispensable for the polite gentleman and author, and easily acquired at an early age.

The pupil should also make some progress in the study of divinity, and endeavour to acquire a knowledge of the laws of his country; indeed of all nations, otherwise he will never be able to discriminate between right and wrong: and this will be best learned from history.

Fencing also is a very necessary accomplishment for a military surgeon; indeed his uniform points out the utility of it. How unfortunate the man must feel himself who is obliged to wear a sword by his side, and who has not the most distant idea of the manner of using it, either by way of attack or defence; consequently, cannot protect himself in the hour of danger! In action the surgeon is often so situ-

ated, that he is frequently liable to encounter an enemy in single combat.

All candidates for surgeons should be early made acquainted with the classics*. A perfect knowledge of the Latin language, with a tolerable share of Greek, must be acquired, so as to read, write, and speak the former with the utmost fluency, without which it will be impossible for the young surgeon ever to excel in his profession. The French language is now become so universal, that it cannot be dispensed with; and the German would be found, not only ornamental, but of great utility to medical gentlemen practising either in or out of Europe. All of which might be acquired at most of the academies† near London, or indeed in any part of Great Britain, at the age of fifteen years: four might be passed in one of

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* Classical learning signifies a knowledge of the best Greek and Latin writers, enabling the reader to perceive and admire the peculiar beauty of their compositions, and to adopt their diction and sentiment. The principal classic Greek authors are—Homer, Hesiod, Plato, Demosthenes, Æschines, Xenophon, Plutarch, Isocrates, Epictetus, Lucian, Sophocles, Euripides, Longinus, Theocritus, Anacreon, Pindar, Aristophanes, &c. The chief Latin writers are—Cicero, Livy, Cæsar, Sallust, Virgil, Horace, Terence, Plautus, Juvenal, Ovid, Pliny, Valerius, Paterculus, Tacitus, &c.

† Rev. Dr. Mavor's, near London, a celebrated scholar and author; Thomas Browne's, M. A. late a tutor at Eton college, Wright's Buildings, Kensington.

the universities*, to obtain the degree of *artium baccalaureus*†; and three more in attending lectures on anatomy‡, surgery§, physic‖, and chemistry, at some one of the public

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* Oxford, botany, natural history, theory of physic, &c. might be studied here to advantage.

† By obtaining this degree, which can be done in four years, it will (although it may not be thought essentially necessary) give a young surgeon a superiority over the generality of his present brethren in the profession. Four years are requisite at Oxford and Cambridge for the degree of *artium baccalaureus*; seven years, *artium magister:* eight years are also necessary for *medicinæ baccalaureus*, and eleven years for *medicinæ doctor*.

N. B. The first four years must be almost all passed at college, till the student is a bachelor of arts; after that he may go on to his other degrees by residing about a month per annum.

‡ Among the writers on anatomy, Winslow is deservedly in the greatest esteem: his works have been translated into our language by Dr. Douglas. Albinus's tables and writings are too well known to require any eulogium. Heister and Cheselden are also authors, whose writings on this subject deserve much praise. The student who consults Winslow, Heister, Monro, Cheselden, and the tables of Vesalius and Albinus, may consider his reading all other works on this subject more from curiosity than real utility, as he may arrive to the highest pitch of knowledge in anatomy by studying those authors only, as far as it can be learned from reading.

§ Thomas Keate, Esq. F. R. S. surgeon to St. George's hospital and surgeon general to his majesty's army, twenty guineas twelve months; and — Phillips, of Pall-Mall, Esq. surgeon to his royal highness the Prince of Wales, twenty guineas twelve months, Mary-le-bone infirmary, New Road.

‖ George Pearson, M. D. F. R. S. and senior physician to St. George's hospital, professor of medicine, a sound author and a most ingenious chemist, twenty guineas to be a perpetual pupil to all his lectures, and twenty guineas for twelve months to attend him as physician's pupil at St. George's hospital.

hospitals in London, Dublin, or Edinburgh, which would make him twenty-two years of age, before which period he will not be examined at the Royal College of Surgeons for a diploma. But he may make application at the age of sixteen or eighteen, to be examined for an appointment in the army or navy; a practice which, I must confess, is to be much lamented, and which I hope will be discontinued as much as the nature of those services will permit. How can a boy (for such he is) be considered capable of reasoning maturely on any subject? how much less are such persons competent to prescribe for the sick, often in various cases and situations where physicians and surgeons of great experience are baffled!

It is almost needless to observe the absurdity and folly of apprenticing a youth, intended for physic or surgery, to an apothecary for six, seven, or eight years; all that time is lost sweeping the shop, arranging the bottles, and compounding a few medicines: this is in general the summit of the knowledge acquired.

I mentioned the utility of the German language; I am confident it will be found so on very many occasions, it being a recommendation cannot be doubted: it is not only spoken at court, but, in compliment to their majesties, by every person of rank and fashion in all

polite assemblies. Many soldiers also in our service cannot speak any other language; the Barbadoes emigrants for instance, nearly one thousand strong. Those and others will be frequently met with in his majesty's general and regimental hospitals, and their diseases cannot be perfectly understood without a knowledge of this language; at best it cannot be but superficially learned through the interpretation of one of their ignorant countrymen, who perchance may speak a little bad English.

I shall now, however, consider the pupil of age, his education complete, and, consequently, qualified to make application to be examined at the Royal College of Surgeons in London for a diploma*. Should the army be his pur-

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* DIPLOMA.

MOTTO.—"*Quæ prosunt omnibus artes.*"

"Know all men by these presents, That we the Court of Examiners of the Royal College of Surgeons in London, have deliberately examined Mr. ———, and find him fit and capable to exercise the art and science of surgery; we therefore admit him a member of the college, and authorize him to practise the said art and science accordingly. In witness whereof we have subscribed our names, and have caused the common seal of the college to be assigned hereunto. Dated the day of in the year of our Lord 180 ."

A diploma to practise generally will cost £31 10s.; 5s. to the secretary, and 2s. 6d. to the porter. To practise any where distant from London above seven miles, 15 guineas, with the addition of a note of hand for 15 guineas, in case the person should ever afterwards practise within seven miles of the city of London.

suit, he must apply to the Army Medical Board in Berkeley-street, Piccadilly; from whence he will be directed to the War Office. The secretary at war will give him a letter* to the College of Surgeons, desiring them to examine him, touching his knowledge in his profession: for which he will pay five shillings to the secretary at war's clerk. This letter† he will take with him to the College of Surgeons, Lincoln's-Inn Fields, one week previous to the next examination day, and deliver it into the hands

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* "WAR OFFICE, 180 .—Application having been made for Mr. A. B. to be regimental surgeon (assistant surgeon or hospital mate, as the case may be), I am directed by the secretary at war to desire that you will be pleased to examine the said A. B. and acquaint this office whether he is fitly qualified for the above station. I am, gentlemen, your most obedient servant, "M. LEWIS."

"Principal officers of the
Royal College of Surgeons."

† Should the candidate prefer obtaining in the first instance a diploma, it is to be observed, that the examination at the College of Surgeons will be the same as if for a regimental surgeon, or naval surgeon for a first rate ship of war; but the expence of the diploma will be considerably more: nevertheless, I think the latter much more eligible, as the person will become a member of the Royal College, and, in my opinion, the few guineas difference cannot be considered by any one an object. It is true, the person may afterwards apply to become a member of the college, but he must undergo another examination before he can be admitted, although he has already passed for a regimental or naval surgeon: a diploma, therefore, is evidently the most eligible.

of the secretary* there, that his name may be laid before the examiners, for their investigation previous to his being examined. The secretary will make him acquainted with the hour of meeting, to which time he will be punctual in his attendance. He will be presented to the Court of Examiners in his turn, and the master will direct one of the gentlemen to examine him. He will be questioned as to his age---where he received his education---the different professors he attended---the hospitals in which he practised---the operations he saw performed---and, lastly, he will be strictly examined as to his knowledge in anatomy and surgery.

It would be an injustice in me to omit observing in this place, that the candidate will be most liberally and gentlemanly questioned, and every indulgence given; I therefore recommend to him not to be under any apprehension, but to answer ingenuously, to be cool, collected†,

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* Pay with this letter 5s. and 2s. 6d. to the porter at the door.

† "If any candidate for the diploma of the college, or for a qualification in any service by sea or land, shall conduct himself irreverently or disrespectfully to the Court of Examiners, or to any member thereof, or to the secretary, or other officer of the court, he shall not be admitted to an examination at that court; or if his examination have begun, it shall not be proceeded in; or if it be ended, the diploma, or certificate of qualification (as the case may be), shall be withheld for such time as the court shall deem proper."

and perspicuous; and I am fully satisfied he will meet with the candour and honourable treatment for which that august assemblage is so universally admired. After the examination is over, and should his answers be satisfactory, he will be immediately announced to the master qualified*. A certificate† to that effect will be sent the following day to the War Office, where it will be filed: the candidate is, however, to apply by letter, addressed to the secretary at war, for a copy, which he will get on payment of five shillings. He will then take it to the Army Medical Board, and present it to the inspector general's secretary, who will acquaint him of the next examination day, that he may be ex-

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* "All persons examined and passed at any Court of Examiners, shall pay not less than the following fees, namely—for a principal surgeon, three guineas, and for a mate or assistant, one guinea, being the fees heretofore usually paid upon such examinations."

† "*To the Right Honourable the Secretary at War,*

"SIR,

"We have examined Mr. ———, and find him qualified to serve as ——— to any regiment in his majesty's service. We are your most obedient servants,

"———, master.
"———, warden.
"———, } examiners."
"———, }
"———, }

"*Surgeons' Theatre.*"

amined by the board*, touching his knowledge of physic, it being indispensable, although he has already obtained his qualification from the College of Surgeons. He will be very careful in taking with him his qualification from the college, and all other vouchers, certificates, &c. of having attended the several lectures on physic†, &c. the hospital or hospitals he attended, as the board will no doubt desire to see them.

He will be received with the utmost politeness, and examined with the same liberality I have had occasion to mention before respecting the Royal College of Surgeons; therefore the same comportment is recommend here. If the board feels satisfied with the candidate's answers, and more particularly if he has in reality merit, they will shew their satisfaction by entering after his name, in a book kept for the purpose, "*optime*," those of mediocrity, "*bene*." Should

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* The Army Medical Board consists of Sir Lucas Pepys, Bart. physician general to the army, &c. &c. &c.; T. Keate, Esq. F.R.S. surgeon general to his majesty's forces; and F. Knight, Esq. inspector general of hospitals, &c. &c.

† Medical chirurgery should be more strictly attended to than is usual: young surgeons may conceive that a perfect knowledge of anatomy is almost quite sufficient; the reverse, however, is the fact.

he be so unfortunate not to be able to answer satisfactorily the various questions he may be asked, it will, in all probability, be recommended to him to attend lectures in physic three or six months longer, when "referred" will be placed after his name. He will, however, at the period limited, again apply to be examined, taking care to bring with him a certificate of his having conformed himself to the directions received from the board, in having re-attended lectures, &c. It is to be presumed he will now be perfectly able to give the satisfaction they may require, and consequently pass his examination. Should he thus succeed, he will receive an appointment of hospital mate*: in some cases he may be in the first instance appointed assistant surgeon, but it is almost always expected that he should first serve as an hospital mate, before he is promoted to the rank of assistant surgeon.

In the army, deputy purveyors are sometimes made from the list of hospital mates and as-

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* Hospital mates, and all medical officers in the army, have commissions signed by his majesty, who have been appointed subsequent to the 22d May, 1804. In the navy, all medical appointments are signed by the commissioners for transports, sick and wounded seamen, &c. &c.

sistant surgeons, and purveyors from surgeons. All the appointments of inspectors of hospitals, deputy inspectors, purveyors, deputy purveyors, clerks to purveyors, and hospital mates, are in the gift of Mr. Knight, the inspector general of hospitals in Great Britain, who lately replaced my friend, the much to be lamented Mr. Rush: of Mr. Knight I believe there is but one opinion; he is a man of talent, strictly attentive to his duty, just in his official situation, and in every respect qualified for the high situation of inspector general of army hospitals. Staff and regimental surgeons, assistant surgeons, in that of Mr. Keate, the surgeon general; and all appointments of physician are centered in Sir Lucas Pepys, Bart. physician general to the army.

The candidate having now, it is presumed, obtained his appointment from Mr. Knight, and letter of destination, it will become me here to impress upon his mind, that for the future he will be indebted chiefly to his own merit for further promotion; and to point out to him the most eligible way of travelling &c. But first, I would recommend punctuality in instantly setting off, in obedience to the command in his letter, and strictly conforming thereto: it will give the surgeon general

and the board a high opinion of his zeal for the service, and he will be justly considered a fit person to be relied on in cases of emergency. Strictest obedience, and conformity to orders, should never be lost sight of under any pretence whatever. Should, however, his business be of such importance as to absolutely require some short stay in London, an application by letter to the surgeon general may probably procure a few days; but if it can be dispensed with, it will be much better not to trouble him on the subject.

I shall suppose, for the sake of brevity, a voyage to the West Indies as a model for any other, with but few exceptions. For the sake of perspicuity, I shall suppose a gentleman ordered to Barbadoes, one of the Charibbee Islands, at present head-quarters, and has been since Martinique was given up to the French, an unforeseen circumstance. Every hospital mate, on his first appointment for the West Indies, is allowed to draw on the agent for army hospitals* for three months' pay in advance, at 7s. 6d. per diem nett, ten guineas out-fit money, and 9d. per mile tra-

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* James Window, Esq. No. 30, Charing Cross, London.

velling expences by land to Falmouth, and £34 10s. in aid of his passage in the packet; but should he be ordered to take a passage in any merchant vessel, then only twenty guineas will be allowed in aid of passage. The most expeditious way of getting to Falmouth is by the mail-coach, but the fare inside, independent of luggage (14lbs. excepted), is seven guineas and a half. By making inquiry at some of the taverns, two persons might be met with going the same route, and who would be glad to join in a post-chaise; which would be more pleasant, nearly as expeditious, and much less expensive. Lastly, I should recommend to the economist a coach that sets out from Gerrard Hall, Basing-lane, near Cheapside, every evening, which arrives at Falmouth about nine hours later than the mail, and at half the fare.

On arrival at Falmouth, it will be necessary to make it known to the principal medical officer there. He will endorse the respective bills, which must be drawn separately, viz.

Three months' pay, at 7s. 6d. per diem.

Out-fit money.

What allowed in aid of passage.

Travelling expences, miles, at 9d. per mile.

Surgeons are allowed 1s. per mile, and physicians 2s. 6d.

A passage in the packet to Barbadoes is fifty guineas, and every thing is found except bedding. If you are to proceed to Jamaica, in that case you must give the captain of the packet fifty-five guineas; otherwise, on your arrival at Barbadoes, he will charge you twenty guineas to take you from thence to Jamaica, and you will also be obliged to find your own table, which will be an additional expence of at least £15. Immediately after a passage is secured, it will be advisable not to lose a moment in purchasing any article that may have been hitherto neglected, and particularly bedding, wearing apparel, &c. The former should always be purchased at the port from whence you sail; by that means the expence of carriage will be avoided, and the articles will be purchased nearly as cheap as in London.

BAGGAGE, &c.

It may not be unnecessary to observe, that the clothing generally worn in Europe will be of very little utility in the torrid zone, boots and uniforms excepted; of the former six pairs at least, of the latter two suits will be sufficient: three light dresses of nanking, but what is much more elegant, white jean jackets and trowsers; light hats, green underneath, are

very commodious; moscheto curtains for bedding are not to be neglected; and at least four dozen shirts, made of fine India calico; a good supply of stockings and fine flannel, and a dozen pairs of light shoes.

Indeed from what has been said on climates, it is almost unnecessary to say much of baggage. The clothing should be light, and as much curtailed as possible, shirts excepted, and flannel vests, which should be of the finest quality.

LIBRARY.

The library of a military surgeon should be in his head; but as it is impossible for any man to do without the occasional use of books, to bring to his recollection what he has already learned, he may take with him a few, but well selected. A brief treatise on anatomy; another on surgery and one on medicine,---Dr. Cullen's First Lines of the Practice of Physic, if abridged, would excel all others; Dr. Priestley on Air will be found useful; Sir John Pringle on Army Diseases; and some work on chemistry, perhaps Chaptal's; and particularly a dictionary of the language of the country he is going to, with a few maps and charts. Increasing his library will be increasing his trouble, for he may often be obliged to leave the whole behind him.

Two trunks, with tops to buckle over, will be found sufficient, and indeed troublesome enough; they should not exceed three feet in length, and twenty inches in breadth. To cavalry officers, military as well as medical, those trunks would be found of utmost importance, both of which may be readily placed on the bât horse allowed; and the mattress, in a portable cot*, might be put between the trunks; the whole to be covered with oil-skin: thus one horse would carry completely all the baggage of an officer.

Infantry regiments of the line and militia, on the march, have baggage waggons procured for them, by order of the magistrate, and the officers are allowed to transport thus a certain quantity of their baggage.

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* The trunks and portable cot may be seen at Morgan and Sanders's, upholsterers, Catharine-street, Strand, London.

BOOK II.

OBSERVATIONS ON GENERAL HOSPITALS.

The staff of a general hospital is composed of the following persons, viz. a military superintendent, a senior medical officer, one physician, one surgeon (commonly called a staff surgeon), and a certain proportion of hospital mates, servants, &c. such as ward-masters, matron, nurses, &c. &c. according to the number of patients. The two former appointments are useless and expensive, they are certainly of no utility; the first has been instituted by the commander in chief, and is in his royal highness's gift.

THE DUTIES OF MEDICAL OFFICERS IN GENERAL HOSPITALS.

Each attending medical officer, i. e. the physician and surgeon, is obliged to keep a journal of their practice; in which the name, age, general constitution, disease, and treatment of the patients are to be regularly entered and fully detailed, together with the day of their admission, discharge, or death.

An orderly hospital mate is to be on duty from the hour of attendance in the morning to the same hour the following morning, to visit the wards frequently, and to be constantly during that period in the hospital. This duty is to be done in rotation, according to seniority.

The orderly mate coming off duty, is, when relieved, to report to the commissioned officer in charge of the hospital, who will report to the military superintendent, its present state, with the alterations during the preceding day, according to the annexed form ; in which he will mention his having visited the hospital at eight o'clock in the evening, with any other remarks that may occur, viz. admissions, discharges, or deaths.

" I visited the hospital at eight o'clock last night, and make the following report this morning.

orderly mate."

Hospital, 180 .

" To the senior medical officer,

Hospital."

Reg.	Name.	Comp.	Adm.	Disch.	Died.	Disea.	Remar

He will also inform the resident mate of any admissions, discharges, or deaths, during the time of duty, that they may be entered in the register by the resident mate.

He is to take the night duty, to see that every thing is quiet and regular; and if any thing extraordinary occurs, he is to report to the commissioned officer in charge of the hospital.

The name, regiment, and company of every patient, with the dates of admission, discharge, or death, are to be entered in the register by the resident mate.

The resident hospital mate, or medical storekeeper, who has the charge of, and is responsible for the medical stores, is not to deliver out any medicines to patients, unless prescribed for them by name in the day-book; he is to see the dispensary locked after the hours of business, and to keep the key of it himself.

When wine is indispensably necessary, it is to be given by the attending medical officer, unless previously mixed by him with medicines or food.

The senior medical officer and physicians are allowed (if resident in the hospital) the same proportion of rooms, furniture, coals, and candles, as a field officer in barracks; the surgeons and apothecaries, as captains; and the hospital mates, as subalterns.

The visiting duty of the medical officer is to commence precisely at nine o'clock, A. M. from Lady-day to Michaelmas, and from Michaelmas to Lady-day at ten o'clock, A. M. The evening visit is to be made at eight o'clock. No medical officer is to absent himself from the hospital without leave from the general commanding the district, obtained through the military superintendent, and with the concurrence of the surgeon general.

Every medical officer doing duty, is to leave his name and address in writing with the resident mate; and any one going away on leave of absence, is to leave directions where he may be found.

REGIMENTAL HOSPITALS.

Three medical persons are allowed to every regiment of one thousand strong, viz. a surgeon and two assistants; and also a sergeant, nurses, and orderlies, in proportion to the number of sick, &c. Regimental hospitals are always procured by the surgeon, and are under his immediate direction. During encampment, an hospital tent is allowed in aid of an hospital; subject, nevertheless, to the general directions and superintendence of the inspector of regimental hospitals; or of any other officers of the medical staff, who may be ordered by the commander in chief to inspect them from time to time.

The regimental surgeon, and his assistants, are to visit the hospital regularly twice a day at least; and the surgeon is to keep a book of the admission, discharge, and the cases of patients, in which the name, age, disease, diet, and treatment, are to be fully inserted, for the use of the inspector of regimental hospitals.

At the first visit he is to enter into a day-book a prescription of such medicines as he intends to administer to his patients*; he is correctly to fill up and sign the ward diet table of the distribution of diet, which is to be hung up in the most conspicuous part of the ward, for the inspection of the whole of the sick, who are to be granted nothing by the non-commissioned officer, or any other attendant at the hospital, but what is expressed on the ward diet table†.

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* In regimental hospitals the surgeon generally takes charge of the medical cases, and leaves the surgical to his assistants.

† For the diet and ward diet table, &c. see page 64.

DIET AND WARD DIET TABLE.

	FULL.	HALF.	LOW.	MILK.	REMARKS.
BREAKFAST.	1 Pint of oatmeal or rice gruel.	1 Pint of oatmeal or rice gruel.	1 Pint of oat or rice gruel, with wine and sugar at the discretion of the surgeon.	1 Pint of milk.	Mutton, fish, chicken broth, wine, porter, cyder, brandy, tea, potatoes, or vegetables, to be allowed to such particular patients whose cases the attending surgeon may think will require such indulgencies.
DINNER.	1 lb. of bread, 1 lb. of meat, 1 quart of small beer.	1 lb. of bread, ½ lb. of meat, 1 quart of small beer.	1 Pint of broth, ½ lb. of bread, barley, or rice, water for common drink.	1 Pint of broth, 1 lb. of bread.	
SUPPER.	1 Pint of broth.	1 Pint of broth.	1 Pint of oatmeal or rice gruel.	1 Pint of milk.	

DIET TABLE FOR WARD No.

NAMES.	DIETS.			Wine, Gills.	Spirit, Gills.	Porter, Pints.	Milk, Pints.	Tea, oz.	Sugar, oz.	EXTRAS.	Amount of the weekly expence of each man's diet, &c.			REMARKS.
	Full	Half	Low								£.	s.	d.	

The surgeon is to make a daily return * of the sick to the commanding officer, and by the 20th of every month†, to the Army Medical Board, a copy of which is to be sent to the inspector of regimental hospitals, according to the usual form, together with observations on particular cases; and especially if a contagious fever or epidemic prevails, it is required that

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* Daily Return of the Sick of Regiment of

Troop or Company	Men's Names.	Diseases.	No. of Days in the Hospital.	Admitted.	Discharged.	Died.	General Remarks.

In hospital last return
Admitted . . . .
Discharged . . .
Dead . . . . .

Remain in hospital

surgeon.

† For the form of a monthly return, &c. see page 66.

FORM of a MONTHLY RETURN of the SICK of REGIMENT of

Present Strength of the Regiment, Head Quarters, 180 .

NAMES.	AGE.	DISEASES.																	TOTAL NO. OF SICK.	WHEN FIRST RETURND.	Where accommodat				Altertins. since last Return.			GENERAL OBSERVATIONS.
		Fevers.	Pulmonic Cases.	Dysentery.	Dropsy.	Rheumatism.	Disord. of the Eyes	Wounds & Ulcers.	Ruptures.	Venereal Complnt.	Disorders of the Urinary Passages.	Fits.	Tumours.	Fractures.	Contusions.			Convalescent.	Unfit.			In Hospital.	Barracks or Billets	Head Quarters.	Cantonments.	Admitted.	Discharged.	Dead.	
TOTAL																												

the surgeon, or assistant, shall give his opinion fully of the probable cause, and whether such cause is removable, and also an account of the treatment. The surgeon is responsible for the assistants, sergeant orderly, nurses, &c. doing their several duties.

In cantonments and barracks, the quarters of one of the surgeons are to be very near the hospital; when encamped, one of them is to sleep in camp, and the other near the regimental hospital.

All recruits examined by the regimental surgeon are to have the following perfections, viz. to be possessed of sight, hearing, and the free use and motion of every limb, without rupture, tumour, enlargement of bones or joints, sore leg, or mark of an old sore; his appearance healthy, and neither consumptive nor subject to fits.

Every military surgeon is to take care of the sick of any other regiment, detachment, or recruiting party, men on furlough, &c. whose regiments are at a distance, provided there is no general hospital in the neighbourhood, and that the surgeon, or assistant, receives his commanding officer's authority for so doing.

The annexed invoice is calculated for one thousand men:

INVOICE OF MEDICINES, &c.

FOR A

FULL REGIMENTAL CHEST.

VOMITUM CIENTIA.

	Lib.	Unc.
Antimon: tartarisat:		8
Pulv: ipecac:	1	

URINAM CIENTIA.

Gum: Arabic:	4	
Kali ppt.	2	
Nit: purificat:	2	
Pulv: rad: scill:		4

SUDOREM CIENTIA.

Gum: guaiac:		8
Liquor: vol: c. c.	1	
Dr. James's powder		2
Pulv: antimonial:	1	
—— Ipecac: comp:	1	

CATHARTICA.

Calomel: ppt.	2	
Cremor: tartar: pulv:	4	
Extract: col: comp:	1	
Fol: sennæ	1	
Flor: sulphur:	2	
Magnes: alb:	2	
——— vitriolat:	30	

CATHARTICA—CONTINUED.

	Lib.	Unc.
Nat: vitriolat:	30	
Pulv: rad: jalap:	2	
——— Rhabarb:	2	
Tinct: sennæ	2	

SEDATIVA ET SOPORIFERA.

Camphor:	2	
Confect: opiat:	1	
Opii purificat:	1	
Pulv: cret: comp: c. op:	2	
Sp: æther: vit: compos:	1	
Tinctur: opii	2	

ROBORANTIA ET ASTRINGENTIA.

Alumin:	1	
Amyli:	1	
Cinchonæ pulv:	40	
Colomb: pulv:		8
Ferr: vitriolat:	1	
Flor: chamæm: pulv:	1	
Tinctur: cinchonæ	2	

AROMATICA.

Confect: aromatic:	2	
Ol: menth: piper:		2
Pulv: aromatic:	1	
——Rad: zingiber:	1	
Spt: vin: rectificat:	4	

MISCELLANEA.

	Lib.	Unc.
Acet: distillat:	4	
Acid: vitriolic:	1	
Ammon: ppt.		12
Aq: lytharg: acetat:	2	
Ceruss: acetat:	2	
Conserv: rosæ		8
Cretæ pp:	2	
Gum: ammoniac:		8
Hydrarg: muriat:		4
——— Nitrat: rub:	1	
Ol: olivæ	4	
—— Terebinthin:	2	
Pilul: hydrarg:	2	
Zinc: vitriolat:	1	

EMPLASTRA.

Empl: cantharid:	6	
——— Ceræ comp:	2	
——— Lytharg: c. resin:	2	

UNGUENTA.

Ung: ceræ flav:	20	
—— Digestiv: virid:	4	
—— Hydrarg: fort:	20	
——— Nitrat:	2	
—— Psoric:	20	

CERATA.

	Lib.	Unc.
Cerat: lap: calaminar:	20	
—— Saponis	1	

LINIMENTUM.

Liniment: sapon: comp:	2	

CAUSTICA.

Argent: nitrat:		2
Cupri vitriolat:		8
Kali pur:		8

MATERIALS, &c.

Lint, 3 lib.;---surgeons' tow, 10 lib.;---linen for bandages, &c. 4 sheets;---skins of leather, 4;---common splints, 1 set;---bougies in a case, 3 dozen;---linen rollers, 12;---flannel rollers, 6;---bag trusses, 6;---writing paper, 4 quires;---wrapping paper, 4 quires;---packthread, 4 ounces;---grain scales and weights, 1 set;---ounce ditto and ditto, 1 set;---a mortar and pestle, a bolus tile, two bolus knives, a spreading spatula, a pot spatula, a glyster syringe and pipes, six small syringes, a pewter bleeding porringer, half a gross of vials in sorts, half a gross of gallipots in ditto, two gross of vial corks, two papers of pill boxes, a small tin pan, a tin funnel, a piece of tape, two sponges, a paper of pins, and a graduated glass measure.

The surgeon is to be always in possession of a complete set of instruments*, and also a field set†, for more immediate use. Hospital necessaries and utensils ought to be furnished for forty patients (when the regiment is one thousand strong), viz. forty cotton nightcaps and forty sets of bedding, in the proportion of four to every hundred men. Each hospital should have a slipper bath, two water-buckets, one dozen of Osnaburgh towels, one dozen flannel cloths, half dozen large sponges, combs, razors, and soap; two large kettles, capable of making soup for thirty men; two large tea-kettles, two large tea-pots, two saucepans, forty tin cans of one pint each, forty spoons,

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* A COMPLETE SET OF INSTRUMENTS, WITH THE MODERN IMPROVEMENTS, FOR REGIMENTAL HOSPITALS.—An amputating saw with spare blade, 1 metacarpal saw with ditto, 24 curved needles, 2 amputating knives, 1 catlin, 2 tenaculems, 1 bullet forceps, 1 pair of bone nippers, 2 screw tourniquets, 4 field tourniquets with handle, 2 calico compresses, 2 trephines with sliding keys, 1 trephine forceps, 1 elevator, 1 lenticular, a brush; key instruments for teeth, to fit trephine handle; 8 scalpels, 2 silver catheters, 1 trocar with spring and introductory canula; 1 ditto, ditto, and canula for hydrocele, 1 probang, 1 long silver probe, and 1 large bougie.

† A COMPLETE SET OF INSTRUMENTS FOR THE FIELD, WITH THE MODERN IMPROVEMENTS.—An amputating saw, 1 metacarpal saw, 12 curved needles, 1 amputating knife, 1 catlin, 1 screw tourniquet, 1 silver catheter, 1 elastic ditto, 2 trephines to fit one handle, 1 trephine forceps, 1 elevator, 2 scalpels, 1 bullet forceps, 1 trocar with spring and introductory canula, 1 trocar with spring canula for hydrocele, a brush, a tenaculem, and thread for ligatures.

one dozen knives and forks, two close-stools, two bed-pans, and two urinals.

The commanding officer should be applied to for a guard, for the purpose of furnishing sentries to the regimental hospital and hospital tent.

Greatest attention should be paid both to the cleanliness of the hospital and the patients. There should not be any encumberance hung on the walls, or placed in the windows, so as to favour infection, or prevent a free circulation of air. Patients, on being received, should be extremely well washed with soap and water, and supplied with clean linen, &c. properly aired. The bedding, linen, &c. of patients labouring under infectious diseases, should be frequently changed, well washed, boiled, and fumigated*; or perhaps if destroyed alto-

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* "Put half an ounce of vitriolic aid into a crucible, glass, china cup, or deep saucer; warm this over a lamp or in heated sand, adding to it, from time to time, some nitre or common salt. These vessels should be placed at twenty or thirty feet distance from each other, according to the height of the ceiling, or virulence of the contagion. In hospitals or prisons, the lamps or vessels containing heated sand may be placed on the floor. The fumigating lamps of Moser may be employed for this purpose; although they would answer much better if the saucer was deeper, and if, instead of a place for a lamp, there was a box proper for containing hot sand, in which the saucer might be placed; as fumigating with nitrous acid is attended with no inconvenience, and as the process is so simple, and the materials so cheap,

gether, it might be consistent with the welfare and health of the men. Convalescents should not be sent too soon to duty; and those with the itch should be placed together in a separate ward. Four frictions, or smearing the body all over four times, at six hours distance, lying in bed the whole time, with the sulphur ointment*, will generally, and almost always, eradicate the complaint: they should afterwards be well washed with soap and water, put on clean linen, and have their clothes previously well scoured.

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it should, as a means of prevention, be employed, for some hours every day, in transports having troops on board, or in crowded hospitals; and if there is any appearance of contagion, the fumigation should be executed with more care and attention, and the vapour confined for several hours at a time. Fumigating vessels or lamps should also be placed contiguous to the hammocks, or beds, of persons affected with any contagious or putrid distemper, whether fever or dysentery.

"As the quantity of vapour depends in some measure on the surface, it is better to have the vitriolic acid put in a number of small vessels, than in one or two large ones; besides, in this way it has the advantage of being diffused more readily in any given space."

See Dr. CARMICHAEL SMITH *on Nitrous Vapour.*

* *R.* Sulph. viv. p. lb. $4\frac{1}{2}$.
Helleb. alb. p. lb. $2\frac{1}{4}$.
Nitr. P. p. lb. $2\frac{1}{4}$.
Sap. moll. p. lb. 9.
Axung. porc. p. lb. 9.

BOOK III.

ON THE DUTIES OF NAVAL SURGEONS, ASSISTANTS, &c. &c.

The duties of naval surgeons, &c. are nearly connected with the military, although far, very far from being so agreeable. The situation in which naval medical officers are placed on board a king's ship, the contempt and disrespect with which they are treated, the persons the assistants are obliged to associate with, and in general the tyrannic dispositions of their commanders, will be for ever a bar to men of any respectability or talent remaining in the naval service any length of time. It is only the servile sycophant that can change his disposition at the nod of his master, and that is found a fit tool for corruption and iniquity, and who has neither public spirit, nor the good of his majesty's service at heart, that will ever succeed to promotion in the navy, particularly whilst under the direction of the present newly organized Transport Board.—*Vide Solon's Letter to the Lords Commissioners of the Admiralty, published in the Britannia July* 5, 1807, *and subsequent dates.*

Every naval medical officer, when appointed to a ship of war, is expected to repair immediately on board after the receipt of his warrant from the commissioners for transports, sick, and wounded seamen, &c. and to strictly comply with the printed instructions he will receive therewith, by which his future comportment must be governed, being truly the naval surgeon's creed; and it should be perused as often as the Old and New Testament. By the bye, I omitted, in the military portable library, mentioning the necessity of a Bible; I acknowledge the error, and am of opinion every one going to sea should be obliged to have one in his possession.

Surgeons and assistants must procure their own chirurgical instruments, a list of which is marked on the back of each warrant, and will cost from twenty to thirty pounds. If it should not be convenient, however, to pay ready money, by application to the Transport Board a set may be obtained from Apothecaries' Hall, at twelve months' credit: an accommodation, however, that should never be resorted to if possible, as these worthy gentlemen of the Apothecaries' Company will not fail to lay on thirty or forty per cent. more than the instruments may be purchased for elsewhere; and

they will take excellent care never to suffer a medical officer's accounts to pass* until they are first paid down, in their own office at the hall, the money to a farthing. These philosophers of the pestle have been known to refuse sending one of their clerks or servants, for the payment of a demand of this nature, to the house of a medical officer's agent, distant but a few hundred yards, although the officer offered to pay coach hire and a guinea for the clerk's trouble (if so it may be called): the gentleman was thus kept years out of his pay, which might have been obtained in half an hour, had these grave apothecaries the smallest spark of philanthropy in their compositions or compounds!!

Great care should be taken to keep the instruments, &c. in good condition: an inspector often visits ships unexpectedly, and may bring the surgeon, or assistants, to a court martial, should the instruments be found on inspection not in good order†.

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* No medical officer can pass his accounts, consequently receive but half his pay, until he first obtains a certificate from the Company of Apothecaries in London, that he is not indebted to them, although he never had in his lifetime any thing whatever to do with them!

† An instance of this nature happened a few months ago: the inspector, Dr. Beard, brought a surgeon to a court martial, and he was dismissed his ship.

The sick berth should be kept very clean and dry, and fumigation* throughout the ship strictly attended to, particularly when infectious diseases present themselves, and there is no possibility of sending the sick men to an hospital-ship, or to an hospital on shore; which should always be done on the first appearance of any malignant disease, to prevent its spreading among the ship's company.

Iron-pots, or hanging stoves, with burning cinders, should be carried between decks into the well, manger, cockpit, cable-tier, the hold, and other parts of the ship, where the air is

---

*"METHOD OF FUMIGATING HIS MAJESTY'S SHIPS.—Five or more iron pots with charcoal, and a quantity of stone brimstone strewed on it, to be placed between the decks, after closely stopping up the hatchways and all other apertures, to keep in the fumes of the brimstone. The bedding should be previously spread out, hung on hooks or lines, detached from each other, between decks; and also such clothes as the men do not stand in need of to wear while this is doing. This fumigation is to be performed repeatedly, every other day. The clothes which the people have on when the first fumigation is made, should be fumigated at the time of the second fumigation; and such of them as have not sufficient for the change, should be supplied with such slops as may be necessary. The decks, sides, and beams are to be washed, scraped, and thoroughly cleaned before beginning the fumigation, and it is advisable that the men's bodies should be well washed in warm water."

Vide Dr. CARMICHAEL SMITH *on Nitrous Vapour.*

stagnant and offensive from defect of ventilation.

Respecting air, cleanliness, &c. &c. both in regard to the sick berths in a man of war and the wards in a military hospital, it is to be observed, that should any neglect happen on this head when a contagious disease may prevail, numerous deaths will be the result; the same plan is therefore recommended to both, as well as the time of visiting, manner of prescribing, regimen, &c.: some difference, however, in diet, to the disadvantage of sick sailors, must ever unavoidably happen, which should be remedied as much as possible by the attention of the surgeon, and philanthropy of the captain and lieutenants, whose tables are in general well supplied. If there is a physician in the fleet, surgeons are bound to consult him in difficult cases, and follow his prescriptions.

The surgeon and his assistants, during an engagement, are usually stationed in the cockpit; but this depends on the captain. A platform, however, ought to be prepared for the reception of the wounded, and every thing should be ready for the reduction of fractures, performing amputation, extracting bullets, splinters, &c. &c.

Petty officers, and others stationed in the tops, &c. should be taught by the surgeon how

to apply the tourniquet, which may be productive of the most beneficial consequences, by being able to immediately restrain an hœmorrhage, that in a few moments might prove fatal. Every officer going into action should have a tourniquet in his possession.

The surgeon is required to make out a list of the names of his patients, with their diseases, and to deliver it every morning to the captain; a copy of which is to be delivered to the first lieutenant by the first assistant surgeon, and another left in the binacle. The naval surgeon is also bound to keep a journal of his practical treatment, &c. similar to the military surgeon, and need not be particularly mentioned here. The annexed scale will shew the proportions in which surgeons' necessaries are supplied to his majesty's ships and vessels, for the use of the sick on board. The surgeon is obliged to make oath, that both the medicines and stores were not made use of by any persons but those entitled to them. This would be a wise regulation indeed, and a saving of many thousands per annum, if strictly adhered to and religiously observed by all officers in the medical departments of the army and navy.

	THREE MONTHS' SUPPLY.		
	BOXES.		
	Double, 100 Men.	Single, 50 Men.	Half single, 25 Men.
New linen - - - - -	6 yards	3 yards.	1½ yard
Welch flannel - -	4	2	1
Tea - - - - - - -	4½ lbs.	2¼ lbs.	1 lb.
Sago - - - - - - -	4	2	1
Rice - - - - - - -	8	4	2
Barley - - - - - -	16	8	4
Soft sugar - - - - -	32	16	8
Ginger - - - - - -	2 oz.	1 oz.	½ oz.
Saucepans - - - - -	1 no.	1 no.	1 no.
Canisters for sago -	1	1	1
Ditto for tea - - -	1	1	1

Barley is not sent either to the West Indies or the Mediterranean; the Sick and Wounded Board officers supply macaroni in the latter place, and arrow root in the former.

NAVAL HOSPITALS.

There are many naval hospitals in England, but that at Haslar, near Gosport, is the only one that is entitled to the name of a truly invaluable asylum for sick sailors and marines (officers as well as men.)

The medical establishment consists of three physicians, three surgeons, one dispenser, and twelve hospital mates*. Each physician has one

* There are besides these many others, viz. a governor, chaplain, steward, agent, a number of clerks and many labourers, servants, &c. the whole of whom, as well as the medical officers, have houses or apartments within the hospital wall, which is about a mile in circumference.

mate attached to him, each surgeon two, and the dispenser three. The duties of the mates are, to strictly comply with the orders of their respective superiors, and particularly to see that the medicines, &c. prescribed by them are faithfully administered.

The physicians and surgeons must have served in the navy previous to their receiving an appointment to an hospital on shore, and are consequently better acquainted with the management of sailors. The humanity, abilities, and attention of Dr. Hope, must ever lessen the miseries of the sick placed under his care. Instead of keeping journals, in the form of naval or army medical officers, they only mark the diseases and remedies on a sheet of paper, called a sick ticket. The daily symptoms are omitted, but upon bad grounds. Haslar is tolerably well supplied with surgeons. Mr. Vance is certainly unequalled; and, I am convinced, if government were to encourage him to give public lectures at the hospital, and cause all the assistant surgeons they may hereafter appoint, to reside there for six months previous to their going on board a vessel of war, thus making Haslar a nursery for surgeons, the state would benefit considerably thereby, and the bad cases that are so frequently brought from on board ships

of war to an hospital, much lessened both in virulence and in their number.

I have seen Mr. Vance perform various operations on the living subject, particularly amputation at the hip and shoulder joints, in a manner that would have excited the admiration of the greatest anatomist of this or any past age; and I do not hesitate to say, that I have seen naval surgeons perform operations in a way that would disgrace a farrier of any repute: well known affairs that occurred last year at the naval hospital at Plymouth, are clear proofs of this assertion.

REGULATION

FOR INCREASING THE ADVANTAGES, AND IMPROVING THE SITUATION, OF THE

MEDICAL OFFICERS OF THE ARMY.

GEORGE R.

WHEREAS we have approved of an arrangement for increasing the advantages, and improving the situation, of the medical officers of our army, with the view of encouraging able and well educated persons to enter into, and continue in, that line of our service; our

will and pleasure is, that from the 25th December, 1803, inclusive, the following regulations do take place on the above head.

I. Hospital mates for general service shall be appointed by commission from us; and shall have the full pay of six shillings and sixpence a day, nett, while employed at home, and of seven shillings and sixpence a day, nett, while employed on foreign stations; with half pay on reduction at the rate of two shillings a day, subject to the usual deduction.

The widows of such as shall have served as hospital mates with our land forces abroad, and shall die on full pay, shall be allowed the pension of sixteen pounds per annum: the children of such hospital mates, and the widows and children of those who shall die on half pay, shall be eligible to allowances from the Compassionate Fund, according to the rules established for the distribution of that bounty.

Hospital mates appointed for temporary and local service, shall not receive commissions, nor be entitled to any of the other above-mentioned advantages, but shall remain in all respects on their present footing.

II. The assistant surgeons of our regiments of dragoon guards and dragoons, foot guards, and infantry of the line, shall, without dis-

tinction as to their having served at home or abroad, have the full pay of seven shillings and sixpence a day, nett; with half pay when reduced at the rate of three shillings a day, subject to the usual deduction. The assistant surgeons of our regiments of dragoon guards and dragoons, shall, while on full pay, receive the further allowance of one shilling a day for a horse, as at present.

III. The apothecaries to our forces, and the surgeons attached to the respective recruiting districts in Great Britain, shall continue on their present footing; the rate of their full pay being ten shillings a day, and that of their half pay five shillings a day, subject to the usual deductions.

IV. The pay borne on the establishment for the surgeons of our regiments of regular infantry, shall be increased to the same rate as that now allowed to the surgeons of cavalry, viz. eleven shillings and four-pence a day, nett; and in the infantry, as well as in the cavalry, the surgeon shall be required to keep a horse at his own expence, to enable him the better to perform his regimental duty. The half pay of regimental surgeons, both of cavalry and infantry, shall be increased to six shillings a day, subject to the usual deduction.

Every regimental surgeon of our regular forces, after seven years service as such, or ten years service with our army in the whole, in a medical capacity, on full pay, shall have his pay augmented to fourteen shillings and one penny per diem, nett; but is not to be entitled on that account to any additional half pay when reduced.

Every regimental surgeon of our regular forces, after twenty years service with our army in the whole, on full pay, shall have his pay augmented to eighteen shillings and tenpence a day, nett, and shall have a claim to retire on half pay at the before-mentioned rate of six shillings a day; but if the cause of his retirement be ill health, contracted in the service, and shall be so certified by the Army Medical Department, the rate of his half pay on retiring after the above length of service, shall be ten shillings a day, subject to the usual deduction.

Every regimental surgeon of our regular forces, after thirty years service with our army in the whole, on full pay, shall have the unqualified right of retiring on half pay at the rate of fifteen shillings a day, subject to the usual deduction.

The widows of regimental surgeons of our

regular forces, permitted to retire after twenty years service on full pay, shall not be precluded from the pension on account of the retirement of their husbands.

The pay of the surgeons of our militia corps, when embodied, shall be increased, as in the line, to eleven shillings and four-pence a day; and the militia surgeons shall be under the same obligation to keep a horse.

V. The full pay borne on the establishment for the surgeons to our forces, shall be increased to fifteen shillings a day, and their half pay to six shillings, subject to the usual deductions.

Every surgeon to our forces shall derive the same advantages as a regimental surgeon, from completing the respective terms of twenty and thirty years service on full pay, as above specified.

VI. The physicians, purveyors of hospitals, and deputy purveyors of hospitals, to our forces, shall remain in all respects on the same footing as at present.

VII. The full pay annexed to the appointment of deputy inspector of hospitals to our forces, shall be twenty-five shillings a day, and the half pay twelve shillings and sixpence, subject to the usual deductions: but after twenty years service with our army in the

whole, on full pay, a deputy inspector of hospitals shall have a claim to full pay at the rate of thirty shillings a day, and to half pay at the rate of fifteen shillings a day, subject to the usual deductions.

VIII. The full pay annexed to the appointment of inspector of hospitals, shall be two pounds a day, and the half pay one pound a day, subject to the usual deductions.

The several appointments under-mentioned, shall be hereafter discontinued in our service, as superfluous and embarrassing, and holding out the idea of distinctions in rank and duty not easy to be defined, viz.

Field inspector.
Assistant inspector.
Deputy inspector general.
Inspector general.
Superintendent general.

GIVEN at OUR COURT at ST. JAMES'S, this 22d day of May, 1804, in the forty-fourth year of our reign.

By his majesty's command,
W. DUNDAS.

PARTICULARS *of such Part of His Majesty's Order in Council of the 23d January*, 1805, *for improving the Situation of the Medical Officers of the Navy, as relate to such Officers serving on board Ships.*

It is ordered that the number of assistants heretofore called "surgeons' mates," to be allowed to the surgeons of his majesty's ships, shall in future be regulated as follows:

First rate	3	assistants
Second rate	3	ditto
Third rate	2	ditto
Fourth rate	2	ditto
Hospital ships	3	ditto
And all other ships entitled, according to the existing regulations, to bear mates	1	ditto

That no person shall, in future, be appointed to serve as an assistant to the surgeon of any of his majesty's ships, who shall not have been found qualified, on examination, to serve as surgeon, or as first assistant: that the pay of assistants so qualified shall be six shillings and sixpence a day, besides the ship's provisions; with half pay when reduced, at the rate of two shillings per day, provided they shall then have

served two years subsequent to the date of this regulation, and three shillings per day if they shall have served three years from that date. That such assistants shall be required to furnish themselves with such surgical instruments as the commissioners for sick and wounded seamen shall direct; and that they shall be rated on the ships' books, where the complement admits of more than one, according to their seniority on the list to be kept by the Sick and Wounded Board.

Whereas there are many surgeons' mates now serving on board his majesty's ships, who have not obtained, and who may not for some time have an opportunity of obtaining, the qualification before required; it is directed that such as serve as first or second mates or assistants, shall be allowed five shillings per day, and those rated third mates or assistants, four shillings per day.

These three classes of assistants shall not be required to provide instruments, nor shall they be allowed half pay; but they shall nevertheless, on proving themselves duly qualified, be placed on the same list with the other assistants, from the date of the first appointment they may receive after such qualification, and commence the time to be reckoned for half pay from such appointment.

All surgeons of the navy who shall not have served in the whole six years, of which not more than three years time as hospital mate or assistant surgeon shall be allowed, shall receive, when employed, a full pay of ten shillings per day; and when not employed, a half pay of five shillings per day.

Surgeons of ships in active service, after having served six years, of which not more than three years time, as hospital mate or assistant surgeon, shall be allowed, shall be paid eleven shillings per day; their half pay to be six shillings per day.

After having served ten years, allowing not more than three years as hospital mate or assistant surgeon, the surgeon's full pay shall be augmented to fourteen shillings per day; his half pay to remain at six shillings per day.

Surgeons of receiving ships, slop ships, convalescent ships, prison ships, and all other ships, except hospital ships, employed only in harbour duty, shall be allowed full pay ten shillings per day, with half pay according to the time of their service.

Surgeons appointed to hospital ships shall receive a full pay of fifteen shillings per day, unless in cases where by the length of their service they may have become entitled to a superior rate of payment: their half pay to be

regulated, as in the case of surgeons of other ships, by the length of their service.

Every surgeon in the navy, excepting surgeons serving on board receiving ships, slop ships, convalescent ships, or any other ships than hospital ships, employed only in harbour duty, shall, after twenty years service on full pay, including not more than three years time as hospital mate or assistant surgeon, be allowed eighteen shillings per day; and after such length of service, all surgeons, in whatever ships they may have served, shall have a claim to retire on a half pay of six shillings per day; but if the cause of their retirement shall be ill health, contracted in the service, and it shall be so certified by the commissioners for sick and wounded seamen, the rate of half pay on such retirement, after twenty years actual service, shall be ten shillings per day.

Every surgeon in the navy, after thirty years service on full pay, including not more than three years as hospital mate or assistant surgeon, shall have an unqualified right to retire on half pay, at the rate of fifteen shillings per day.

That medicines and utensils shall be provided for the service of his majesty's ships and vessels, at the expence of government, in such proportions as shall, from time to time, be

arranged by the commissioners for sick and wounded seamen; but the surgeons shall be required to provide, at their own expence, such surgical instruments as shall be judged necessary by the said commissioners.

No person shall be appointed physician to a fleet or an hospital, who shall not have served as surgeon at least five years: the daily pay of a physician, on his first appointment, to be one guinea, his half pay half-a-guinea.

When he shall have served three years as physician to a fleet or an hospital, his full pay shall be one guinea and a half per day, his half pay fifteen shillings per day.

The full pay of a physician who shall have served in that capacity more than ten years, shall be two guineas per day, his half pay one guinea per day.

That physicians, when a residence is not provided for them, shall be allowed one guinea per week lodging money.

To the widows of physicians and surgeons such a pension shall be allowed as the lords commissioners of the Admiralty shall think it right to grant.

None of the officers before-mentioned, who shall retire from their respective employments without the approbation of the commissioners for sick and wounded seamen, or who shall

refuse to serve when called on, if judged capable of service, shall be allowed to receive half pay, nor shall their names remain on the Naval List. Their widows will not in consequence be entitled to any pension.

No officer, of whatever description, shall be entitled to any of the advantages arising from this regulation who shall not have served during the present war, or until he shall have satisfied the commissioners for sick and wounded seamen of his inability to serve; but such persons shall be permitted to remain on the same establishment on which they may now respectively happen to be.

PARTICULARS *of such Part of His Majesty's Order in Council of the 23d January*, 1805, *for improving the Situation of the Medical Officers of the Royal Navy, as relate to the Hospital Department.*

All assistants of hospitals known at present under the denomination of "visiting assistants, assistant surgeons, and assistant dispensers," to be called in future "hospital mates;" and to be allowed, without regard to the department

of the hospital in which they may serve, six shillings and sixpence per day when employed at home, and seven shillings and sixpence per day when employed on foreign stations; with half pay when reduced at the rate of two shillings per day, provided they shall have served, subsequent to the date of his majesty's regulation, two years on full pay; and further, they are to be allowed lodging money, at the rate of ten shillings and sixpence per week, when not accommodated within the hospital.

Such hospital mates as may remove from one department of the hospital to another, are nevertheless to be required to prove themselves qualified, by examination, for the department to which they may be about to remove; but they may be allowed, before joining the hospital, to prove themselves qualified for every department, by the different necessary examinations.

The widows of such as shall have served as hospital mates abroad, and shall die on full pay, are to be allowed a pension of sixteen pounds per annum; and the children of such hospital mates, and the widows and children of such as shall die on half pay, are to have such allowances as the lords commissioners of the Admiralty, upon consideration of the cir-

cumstances of their case, shall think fit to grant.

All dispensers of hospitals are to receive, when employed, a full pay of ten shillings per day, and when unemployed a half pay of five shillings per day.

Dispensers, when a residence is not provided for them, shall be allowed twelve shillings per week lodging money.

Surgeons of hospitals are to be selected from the list of naval surgeons, and to be allowed fifteen shillings per day on their first appointment, and twenty shillings per day after having served ten years in hospitals: their half pay to depend on the length of their service, at the same rate as is directed in regard to surgeons of ships.

Surgeons of hospitals, when not provided with a residence within the hospital, to be allowed fifteen shillings per week lodging money.

In all cases, time served by surgeons or assistant surgeons of his majesty's navy in hospitals, is to be added to and calculated with the time served on board ship.

Surgeons of naval hospitals, of dock yards, and of marine infirmaries, being on the list of naval surgeons, are to derive the same advantage from completing the respective terms of

twenty and thirty years service, as those who shall have served on board ship.

And whereas, at the present time, some of the surgeons of naval hospitals may not have served on board ship, it is ordered that the advantage of this regulation shall extend only to those already appointed, and that their full pay, half pay, and retirement shall be regulated by the time they have served, as in the case of those who have been employed on board ship.

No person is to be appointed physician to a fleet or an hospital, who shall not have served as surgeon at least five years. The daily pay of a physician, on his first appointment, is to be one guinea, his half pay half-a-guinea.

When a physician shall have served three years as physician to a fleet or an hospital, his full pay is to be one guinea and a half per day, his half pay fifteen shillings per day.

When a physician shall have served in that capacity more than ten years, his full pay shall be two guineas per day, his half pay one guinea per day.

Physicians, when a residence is not provided for them, are to be allowed one guinea per week lodging money.

The widows of physicians and surgeons are to be allowed such a pension as the lords com-

missioners of the Admiralty shall think it right to grant.

None of the officers before-mentioned, who shall retire from their respective employments without the approbation of the commissioners for sick and wounded seamen, or who shall refuse to serve when called on, if judged capable of service, shall be allowed to receive half pay, nor shall their names remain on the naval list. Their widows will not in consequence be entitled to any pension.

MILITARY MEDICAL OFFICERS' UNIFORM.

It is his majesty's pleasure, that, in future*, officers serving upon the medical staff of the army, shall respectively wear the uniforms under-mentioned, viz.

THE INSPECTORS.

Scarlet coat, single breasted, with black velvet collar and cuffs, slashed sleeves and skirts, yellow hospital staff buttons, two epaulettes embroidered with gold on black velvet, with two gold embroidered button-holes on the

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* General Orders, April 11, 1804.

collar, two on each cuff, and two plain on the sleeves; cocked hat, with black feather, black button, and black silk loop; blue pantaloons and half boots; black sword belt (for the waist), regulation sword and sword knot, as approved for officers of infantry.

DEPUTY INSPECTORS.

Scarlet coat, single breasted, with black velvet collar and cuffs, slashed sleeves and skirts, yellow hospital staff buttons, two epaulettes embroidered with gold on black velvet, one embroidered button-hole on the collar, one on each cuff, and two plain on the sleeves; cocked hat, with black feather, black button, and black silk loop; blue pantaloons and half boots; black (waist) sword belt, regulation sword and sword knot, as approved for officers of infantry.

PHYSICIANS.

Scarlet coat, single breasted, with black velvet collar and cuffs, slashed sleeves and skirts, yellow hospital staff buttons, two epaulettes embroidered with gold on black velvet, one button on the collar, one on the black cuff, and two on the sleeves; cocked hat, with black feather, black button, and black silk loop;

blue pantaloons and half boots; black (waist) sword belt, regulation sword and sword knot, as approved for officers of infantry.

SURGEONS.

Scarlet coat, single breasted, with black velvet collar and cuffs, slashed sleeves and skirts, yellow hospital staff buttons, one epaulette on the right shoulder, embroidered with gold on black velvet, one button on the collar, one on the cuffs, and two on the sleeves; cocked hat, with black feather, black button, and black silk loop; blue pantaloons and half boots; black (waist) sword belt, regulation sword and sword knot, as approved for officers of infantry.

APOTHECARIES.

Scarlet coat, single breasted, with black velvet cuffs, slashed sleeves and skirts, yellow hospital staff buttons, one epaulette on the right shoulder, one button on the collar, one on the black cuff, and one on the sleeves; cocked hat with black feather, black button, and black silk loop; blue pantaloons and half boots; black (waist) sword belt, regulation sword and sword knot, as approved for officers of infantry.

HOSPITAL MATES.

Scarlet coat, with black velvet collar, single breasted, slashed sleeves and skirts, yellow hospital staff buttons, an epaulette on the right shoulder, one button on the collar, and two on the sleeves; cocked hat, with black feather, black button, and black silk loop; blue pantaloons and half boots; black (waist) sword belt, regulation sword and sword knot, as approved for officers of infantry.

PURVEYORS and DEPUTY PURVEYORS to wear the uniform of the physician and apothecary, with the exception of silver epaulettes and buttons for gold.

The REGIMENTAL SURGEONS and ASSISTANTS to wear the uniform of the regiment; the coat to be straight, without facings, but with the regimental colour for collar and cuffs, and each one epaulette on the right shoulder.

NAVAL MEDICAL OFFICERS' UNIFORM.

His majesty, by his order in council of the 23d of January, 1805, directs, that the medical officers of the royal navy shall in future wear a distinguishing uniform, and have a similar rank with the officers of the same class in his

majesty's land service; to be subordinate, however, to that of the lieutenants of the ships and vessels wherein they may be employed, during the period of their service, although their appointments may be of prior dates: the lords commissioners of the Admiralty direct that the following uniform shall be worn accordingly:

PHYSICIANS' FULL DRESS.

Blue cloth coat, with blue cloth lappels, cuffs, and collar, collar to stand up, two rows of gold lace (half an inch wide) round the cuffs and collar, three buttons on pockets and cuffs, white lining, white cloth waistcoat and breeches, plain hat.

UNDRESS.

Blue cloth coat, blue lappels, and round cuffs, three buttons on cuffs and pockets, fall-down blue collar, waistcoat and breeches white or blue cloth, as may be convenient.

SURGEONS' FULL DRESS.

Coat the same as the physician, with the exception of gold lace, white cloth waistcoat and breeches, plain hat. Surgeons of hospitals to wear two embroidered button-holes on the collar; surgeons of ships, one.

SURGEONS' UNDRESS.

Coat the same as the physician, but without buttons on cuffs or pockets, waistcoat and breeches of white or blue cloth, as may be convenient.

DISPENSERS OF HOSPITALS.

Blue cloth coat lappelled, blue collar to stand up, round cuffs, waistcoat and breeches white or blue, as may be convenient, plain hats.

ASSISTANT SURGEONS AND HOSPITAL MATES.

Blue cloth coat without lappels, plain round cuffs, stand-up collar, waistcoat and breeches of white or blue cloth, as may be convenient.

All medical officers to wear the sword established for officers of the navy.

Those serving afloat to wear a button with a plain anchor in an oval. Those serving in hospitals to wear a similar button, with the addition of H. S. (for hospital staff).

A pattern of the uniform may be seen at the Transport Office.

RULES, &c.

WHICH OUGHT TO BE STRICTLY ATTENDED TO BY TROOPS AND OTHERS EMBARKED IN TRANSPORTS, DESTINED FOR FOREIGN SERVICE.

The surgeon general sometimes orders medical officers, intended for foreign service, to repair to the military hospital at Gosport, to hold themselves in readiness to embark with troops, perhaps at a moment's notice, either in a transport or store-ship. The accommodation will be nearly the same in both: in the latter, the military are always detached from the ship's officers and men altogether, a separate place being allotted for the army on board all ships of war that carry troops; they will, consequently, have their own mess to find, which will cost, on an average, from ten to fifteen pounds, every two months.

All troops destined to serve in the West Indies, are generally conveyed there in merchant ships, taken into his majesty's service by the commissioners for transports, &c. The master and a few hands are usually left in each vessel: as they are only hired for a few months, and under so many restrictions, but little attention is paid by them to cleanliness; and

indeed it is almost impossible, if they were ever so well inclined, as the transports are in general too much crowded to keep the vessels clean, the number of troops sent out in each transport being generally a double quantity, at the risk of health, not to speak of comfort.

The principal objects, however, are,

I. To guard against accidents by fire.

II. To preserve the health of the troops by cleanliness, discipline, regularity in messing, and general attention to the treatment and conduct of the soldiers while on board.

FIRE.

A sentry is constantly to be placed at the caboose; or one on each side, if the number of soldiers on board the vessel are sufficient; with orders not to allow fire of any kind to be taken without permission.

The commissioned officers are to consider it their especial duty to see, that, in fumigating the transports, every possible prevention be used to guard against accidents by fire.

All lights are to be extinguished at eight o'clock at night, except the lights over which there may be sentries; the officers' lights to be extinguished at ten o'clock, unless the commanding officer on board should give his per-

mission occasionally for a longer time. No lights are to be suffered among the men, except in lanterns.

No smoking to be allowed *between* decks.

FUMIGATION.

The frequent fumigation of the ship is deemed highly material, in order to prevent mischief from confined air. The materials for fumigation may be brimstone, with saw-dust, or the brimstone may be thrown over hot coals; nitre, to which a little vitriolic acid is added, or common salt, with the same addition of vitriolic acid; gunpowder wetted, or the heated loggerhead in the pitch-pot.

CLEANLINESS, &c.

The men are to wash their feet every morning, for which purpose there must be two tubs of salt-water in readiness upon the forecastle by six o'clock A. M.; and again in the evening.

They are to comb their heads every morning with a small-tooth comb, to be shaved twice a week at least, and once or twice a week (in the morning) to wash their bodies all over; to put on clean shirts twice a week, and to have the means of changing their clothes when wet.

Great attention is to be paid to the cleanliness

of the privies, and buckets of water are to be thrown down frequently in the day, to prevent the soil from sticking to the sides of the ships.

The bedding is to be brought upon deck every morning, if the weather will permit, by seven o'clock, and to be well aired, in conformity to the regulations of the Transport Board.

The married people should not be allowed, if it can be avoided, to make separate berths *all over* the ships, by hanging blankets, which obstruct the circulation of the air, but should have adjoining berths in one part of the ship if possible; and, at all events, the women, as well as the men, are to be most strictly subject to the order of getting up at seven o'clock A.M. when all their partitions must be cleared away for the day.

The bedding been brought up, the men are to proceed in sweeping, scrubbing, and scraping the berths and decks; but the decks not to be washed oftener than once a week, and then only when the weather is dry. The time of fumigating between decks, is to be immediately after the cleaning of the berths; and again, if practicable, after each meal; all the dirt, or fragments of victuals, being previously removed by sweeping.

The boards of the lower berths to be removed once or twice a week, to admit of cleaning under.

The officer of the watch is to be always present, and directing, at the cleaning of the berths, &c.; and when the dirt is all cleaned away, to report to the commanding officer, who will order the men to get their breakfast at eight o'clock.

A general parade to take place at nine o'clock, when every man must appear as clean as his situation will allow; his hands and face washed, his hair well combed.

At dinner time, the officer upon duty is to attend to see that the men are regular at their messes; that their rum is mixed with at least three parts of water to one of spirit; and should he observe any circumstance of neglect in victualling the troops, he is to report the same to the officer commanding on board, who, if necessary, will make his complaint thereupon, as also on any other matters touching the conduct of the masters of the vessels, to the agent for transports.

Greatest care is to be taken that the coppers be well and regularly cleaned, both before and after use*.

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* Neglect in this respect frequently proves a remote cause of scurvy. Cast iron would answer every purpose, and be much less expensive.

The men are to parade again at half an hour before sunset, quite clean, as to their persons.

Cooks to appear clean on parade once a day.

At sunset the bedding is to be taken down.

At eight o'clock in the evening every man is to be in his berth, except the men on watch: the officer of the watch to go round with a lantern to see that the above has been complied with.

The whole to be divided into three watches, both subaltern officers and men: the watch gives all the sentries.

A captain of the day to be appointed, to whom the subaltern of the watch will make his reports, and the captain to the commanding officer, if there be a superior officer on board.

The whole watch to be always on deck, except when rain obliges them to go down for shelter; and, in fine weather, every man should be upon deck the whole day.

They are to be drilled as often as the weather will permit; the use of shot as dumb-bells, and any diversions calculated for the purpose of bodily exercise, should be permitted as often as their other duties will allow, as of the utmost consequence in maintaining the health and strength of the men.

THE SICK.

The surgeon or mate is to examine the men's hands at morning parade, and to observe in general if there be any appearance of disease in any of them.

The sick should be separated from those in health as much as possible: upon the first appearance of any acute infectious disorder, the signals to be made to the hospital ship, and the diseased men removed to her.

Certain articles of diet being put on board each transport, under the name of medical stores, these are to be considered as intended solely for the use of the sick, or convalescents: they are to remain in the charge of the master of the transport, and only to be issued upon demand in writing made by the surgeon, from time to time, as he shall judge proper; or, when there is no surgeon, upon demand of the commanding officer: and the surgeon, or commanding officer, is to give the master, at the end of the voyage, a certificate that his demands for the said medical stores have been made only upon proper occasions, and have not been expended for any other use than that of the sick or convalescent.

It will be necessary for the surgeon or mate to guard the men, when they get into a hot cli-

mate, against costiveness: and as upon the first arrival of the transports in the West Indies, a great number of canoes will probably come off with fruit, plantains, &c. generally very green and bad, the soldiers should not be allowed to buy such trash, and should only be supplied with fruit and vegetables under the orders of the officers, and by the recommendation of persons acquainted with the West Indies.

If the soldiers are cleanly, well messed, and attended to in the several particulars above directed, every reasonable hope may be entertained of their continuance in health.

The custom on board transports of serving out the men's allowance of salted meat, &c. when sick, should be religiously guarded against. Their rations thus distributed are made use of by the others, who have already a sufficient quantity to preserve health: thus disease is too frequently the result, by overloading the stomach, the grand cause of indisposition in all climates, especially warm latitudes.

If the masters of transports were to furnish themselves with certain species of necessaries, as Madeira wine, porter, and spruce beer, dried fruit, good sugar, rice, and plenty of lime-juice, to serve to the sick and convalescent,

in lieu of rum and the common provisions of the ship; independent of the government allowance, under the name of " medical stores," which is generally both scanty and badly supplied, relying too much on the use of medicines alone; the good effects that would result from a regulation of this nature is evident: it would be productive of the most happy consequences in preserving the lives of the troops, and recovering the health of the poor fellows taken ill in situations destitute of most of the comforts that may be obtained on shore, and so essential to alleviate the distresses of the sick.

Every person, by his own experience, must well know, that salted beef and pork are much more difficult of digestion than newly killed meat, unless corrected by fresh vegetables, bread, or fermented drink. The scurvy among sailors and soldiers, during long voyages, is often produced by the use of salted provisions, even with the assistance of preventives, especially when stock-fish, salted fish, bad biscuit, ship pudding*, and other indigestible food, are freely used in conjunction.

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* A tenacious viscid mass, composed of flour, water, and pickled suet.

BOOK IV.

PREPARATION NECESSARILY TO BE OBSERVED WHEN CROSSING THE ATLANTIC OCEAN, FOR THE PURPOSE OF ASSIMILATING THE BODY TO TROPICAL CLIMATES.

"Vitaque mancupio nulli datur omnibus usu."

ASSIMILATION is properly a motion whereby bodies convert others, duly disposed, into a nature like or homogeneous to their own. An example of which we see in flame, which converts the oily or other particles of fuel, into its own fiery and luminous nature. The like also appears in air, smoke, and spirit of all kinds: and indeed the same in vegetables, when the watery juices imbibed from the earth, being further prepared and digested in the vessels of the plant, become of a vegetable nature, and augment the wood, leaves, fruit, &c. So also in animal bodies we see the food assimilated or changed into an animal substance by digestion, chylification, and the other operations necessary to nutrition.

The human body, in crossing the Atlantic Ocean to the West Indies, is seldom if ever materially affected before arriving in 23° N. latitude. Robust youth, and men in the prime of life, who have not been accustomed to warm latitudes, are more liable to be acted upon by the superabounding caloric in the atmosphere; and consequently, if not permitted to enjoy sufficient tranquillity, are more subject to febrile diathesis. Yet the very great perspiration to which men are so subject in those latitudes, often prevents disease: even those who are frequently intoxicated, and use violent exercise, and in fact commit every excess, commonly escape, owing to the economy of that physician nature, carrying off by the pores the matter too redundant in the system, which is the principal cause of illness in these regions. It is a well known fact, that when the body perspires strongly, it is less heated than surrounding bodies, and that perspiration always produces a certain degree of coldness*.

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* All bodies, by passing from the solid or fluid state to the aëriform state, absorb heat, which becomes latent; and it is by virtue of this heat that such bodies are placed and maintained in that state. On this principle is founded the process, practised in hot climates, to cool liquors used for drink. The water intended for this purpose is

Violent exercise in the heat of the sun, night air, and dew should be religiously guarded against in all hot climates all over the world, as already sufficiently proved in my Prophylactic Regimen. All strangers to the torrid zone should, a day or two before their reaching the tropic of Cancer, make use of some gentle purge (Rochelle salt, about ten or twelve drachms may answer well, which should be repeated every third or fourth day for a fortnight, and perhaps oftener, according to the strength and age of the person); if much plethora prevail in the system, bleeding should be had recourse to in the first instance, and the saline purgatives to immediately follow.

Catarrhal complaints, determination to and slight congestions in the lungs, the liver, and the head, are, together with eruptions on the surface (called by the West Indians "prickly heat"), and a tendency to stupor and drowsiness, very frequent, on arrival in this latitude. Ca-

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put into very porous vessels, and exposed to the sun, or to a current of warm air, to cool the fluid contained within them. The workmen employed in glass-houses, founderies, &c. and the slaves in Barbary and the West Indies, live in a medium hotter than their bodies, the natural temperature of which is equalized and moderated by copious perspiration.

lomel and Dr. James's powder (and not the antimonial powder, the latter often producing in the smallest quantity violent vomitting), combined in small doses, as one grain of each, should be had recourse to at bed-time. If the mouth gets sore, a saline purge must be immediately administered, and the pills discontinued. Should the bowels be affected by the calomel, a little opium added to each pill, with one drop of the oleum essentiale seminum carui, will remedy the evil and prevent their griping qualities; and a continuance of fourteen or twenty days taking the pills, will in general be found sufficient.

The plethora and rigidity of fibre thus lessened, bathing in salt water daily, during the voyage, is advisable. Where troops are embarked, a large tub may be kept on board for that purpose, and the water readily changed after every bathe: it will be exercise for the men, a matter which should also be carefully attended to, thereby answering a double purpose. Cheerfulness and mirth should be always encouraged; but too much fatigue carefully avoided, and also the use of too much spirituous or fermented liquors. Generous wine, and a moderate quantity of fresh animal food, with plenty of roots and vegetables, pickles, &c. will be admissible;

soda water for common drink will be found very useful and grateful to the palate.

Covering the body with calico or flannel* is advisable: the former will answer every purpose, provided the person is not to be exposed to night dew; in the latter case flannel must be worn in preference to calico.

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* Insensible perspiration is encouraged and promoted by wearing flannel next the skin; it readily absorbs perspiration, which is soon distributed through the entire substance, and by being exposed to a large surface, is carried off readily by the atmosphere; and the perspiration received in the inner side, is, by evaporation, immediately transmitted to the outward, in consequence of the strong attraction between the flannel and the vapour: the pores of the skin are therefore disencumbered, and are at all times surrounded, consequently, by an atmosphere dry and salubrious. Linen worn next the skin, when wet with sweat, has the contrary effect. In tropical climates, its use is almost insupportable by Europeans: it does not, like flannel, promote insensible perspiration, or favour its evaporation; it is consequently very liable to produce cold, the forerunner of fever, &c. Under these circumstances, I am of opinion, that troops, before or immediately after disembarking, and British sailors employed on shore duties, should wear flannel vests next their skins; especially those persons who are subject to pneumonic complaints, dysentery, diarrhœa, or other continual diseases; or those whose duties require their being out much in the heat of the sun or night dew. But I am, nevertheless, fully convinced, that flannel ought not to be worn by persons in perfect health, who are not obliged to encounter the night dew, the heat of the sun, or use immoderate exercise: calico shirts, frequently changed, will answer every purpose for this description of persons. And indeed if flannel is not kept clean by the soldiers, its use will be always dangerous, by absorbing and imbibing diseases.

Perhaps anointing the bodies of troops with the best sweet oil*, on their arrival in tropical climates, and obliging them to continue its use once every eight days for the first six months after landing, might be a certain preventive to the yellow fever, &c.

On any slight attack of the fever, the use of warm baths, calomel, and James's powder should be instantly had recourse to. I found this practice always answer my most sanguine expectation. I have observed universally, that those persons labouring under lues venerea, and who have been at the same time using mercury†, prior to their arrival in the West Indies, seldom have had any attack of the fever. After landing, I refer to my Prophylactic Regimen.

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* The coolies or porters (in Tunis, &c.), employed in the oil stores, always anoint themselves with oil, and their clothes are always well soaked with it; and although the plague rages so much in Tunis, these men never get it, there is no instance of their taking the disease. In the summer these coolies frequently sleep in the open streets, on the ground, without shoes and stockings, and are frequently surrounded by scorpions in great numbers, running on them, as well as other venemous animals, yet they never bite them.

† Perhaps the mercury may, by a specific power, enter into contact with the offending matter on its approaching the system, and thereby render the matter harmless and inert.

BOOK V.

REFLECTIONS ON THE ARRIVAL OF TROOPS IN THE WESTERN HEMISPHERE, WITH OBSERVATIONS ON THEIR DISEMBARKING, QUARTERING, BARRACKS, ENCAMPMENTS, &c.

All ships or vessels of whatever description, that carry troops to the West Indies, should, upon their arrival there, and before they come to an anchor, make choice of a good situation (avoiding any position to leeward of swamps or marshes,) where the sea breeze blows freely. It will be some preservation of health to make the ship ride with a spring on her cable, that her side may be turned to the wind; whereby a free ventilation will be produced, and the foul air from the head, which is the most offensive part, will not be carried all over the decks, as it must when the ship rides head to wind. If the anchor should have a muddy bottom, the cable, when taken on board, will fill the vessel with a bad smell, and may produce disease; it should therefore be well cleaned before stowed in the hold. Troops

should not be disembarked before quarters are provided for them, and disembarkation should always take place soon after sunrise.

The most healthy situations on the islands are high grounds, distant and to windward of newly cleared land, swamps, and marshes. Keys, known by the name of sandy islands, are very healthy; but these situations having no water, great care should be taken to supply the troops placed there with that useful beverage, and of the best quality.

Much attention should be paid to troops on going into barracks. Their rooms should be large, airy, well ventilated, and in healthy situations; and none quartered on ground floors. The soldiers should sleep in hammocks with a cot frame, and utmost attention paid to cleanliness.

When troops are encamped, it will be very material to have their tents boarded, as straw is not to be had in the West Indies. Frequent change of ground is an excellent preventive to the diseases troops are mostly liable to during encampment.

The men, almost immediately after their arrival, should be divided into messes, and regularly supplied with two good meals a day. Coffee, or cocoa, with sugar, will be found an

excellent breakfast. Salt provisions, with yams and plenty of vegetables, will answer well for dinner, with the addition of some spice.

Fresh provisions should be supplied as often as possible; and the men should be prevented exchanging any of their provisions with the natives for rum*, that deadly potion. All animals intended for the use of troops, should be killed at night, and delivered by daylight the next morning, to prevent being fly-blown.

The quality of rum should be particularly attended to; it should be at least three years old, and before delivered to the troops, mixed with two parts water. Porter, which is an excellent beverage, should be given in the quantity of a pint to each soldier daily, on fatigue, or who has long marches to perform.

Troops should never, on any pretence whatever, be supplied with butter in a tropical climate; it creates bile, a redundance of which is the proximate cause of the yellow fever in the West Indies. Cooking should also be performed in the shade, as increased heat will produce the like effect.

Health is also preserved by regular and

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* New rum, drunk even once to excess in the West Indies, is certain death.

moderate discipline: soldiers should always be exercised early in the morning or in the evening, and never continued for a longer space of time under arms than an hour, unless necessity require the contrary.

However destructive the night dew may be considered to the health of European troops, yet all marches should be performed universally after sunset. Sea-bathing is highly salutary, and should always take place about sunrise, and should not be more frequent than four times a week; a few minutes in the water at each bathe is quite sufficient.

In the West Indies the negroes should always perform fatigue duties, as carrying water, provisions, dragging guns, &c. usually done by the pioneers of the British army in the United Kingdom.

Flannel waistcoats and drawers for night duty, on actual service, are indispensable, which should be frequently washed: good worsted socks, loose calico trowsers, and white cloth gaiters, made to meet the calf of the leg, will be found to prevent the most troublesome insect* in the West Indies getting into the men's

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* A chigoe.

feet. Hats should be made high in the crown, with the brim broad, so as to cover the face; jackets sufficiently large (without any skirt) to button across the body, and every regiment should have plenty of watch-coats; half a square of black cambric muslin, as a neck-kerchief, would answer better than either leather or cloth for stocks, and the expence, when compared to the comfort, cannot be considered an object.

Knapsacks should be made of the lightest materials, and no man allowed to have one useless article.

Every precaution should be used to prevent sore legs from the bites and stings of the various animals and insects with which the West Indies abound. In ninety-nine cases out of one hundred, immediate application of lime-juice, and, if necessary, a frequent repetition, will cure either the bites or stings of these creatures: the neglect, however, of this application frequently produces sores, which often become dangerous ulcers.

All hot climates tend to induce languor and inactivity, against which officers as well as men should particularly guard, by taking moderate exercise morning and evening; over fatigue in the heat of the sun is to strangers certain death.

Abstemiousness in diet, as well as intempe-

rance, should be studiously guarded against: good living, and the moderate use of a reasonable quantity of generous wine* (the best medicine and preventive of almost every disease incident to the human species, and in all climates), should not be abstained from: it is to be observed, nevertheless, that frequent intoxication from its use, in hot climates, will occasion certain death sooner or later; the cause of which is well known to every philosopher.

Officers of every description, whether military or medical, cannot be too attentive to the welfare of their men; great regard should be paid to cleanliness, good living, clothing, sea-bathing, moderate exercise out of the sun, and airy quarters in a healthy situation.

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* "I am disposed," said the immortal Cullen, "to believe, that, of all kinds of stimulants, wine is the best: it has the advantage of being grateful to the palate and stomach; but is of little service unless taken pretty largely." Wine is a valuable cordial, and is much superior to most other stimulants; it raises the pulse, supports the *vis vitæ*, promotes diaphoresis, and resists putrefaction. It is a principal remedy in gangrenes, the plague, putrid sore throat, typhus fever, and in all cases of languors and great prostration of strength. Delirium, which is the consequence of excessive irritability, and a defective state of nervous energy, is frequently removed by its being taken liberally; and it is well known amongst physicians, that those persons who indulge in its use, are rarely attacked by putrid diseases.

PLAN

FOR ASCERTAINING AND INVESTIGATING DISEASES.

In this plan I shall strictly follow the ingenious Doctor George Pearson, late of Leicester-square, now of George-street, Hanover-square: whatever it is, it is his; and I feel a peculiar pride in acknowledging that I have borrowed his ideas, not only in this, but other parts of my work. This plan, besides being evidently concise and clear, has unquestionably a superiority over any thing of the kind ever laid before the public; and cannot fail, from its conciseness and elegance, making a lasting impression on the young practitioner's mind. It cannot be too often repeated, that the curing diseases will often depend on a full and minute investigation of their cause; and indeed every one must readily allow, that method in that case is indispensable.

The immortal Maupertuis proves, beyond every doubt, that questions properly put to a patient will produce answers, that will frequently throw a light on the true nature of the disease; and by a little serious reflection, the real cause, and the state of the constitution, may be developed, which otherwise might

remain dormant; the patient's usual way of living, his real situation in life, and even his temperament, should be understood; all of which, in my opinion, the physician or surgeon should make himself well acquainted with, if possible, before he prescribes. We all well know, that a certain state of the mind has frequently produced amongst sailors and soldiers a very peculiar disease, and particularly when they may at the same time have a very great desire of returning to their native country or former occupations. A general medicine, I pronounce it, is as chimerical as the *lapis philosophorum* of some madmen. The pharmacopœia, to be successful, must be adapted to the violence or different degrees of the disease, the constitution, and disposition of the patient.

Among young practitioners, the want of a plan of this kind is very evident; they learn by heart a few recipes for some peculiar disease, and apply them promiscuously, perhaps in all cases, without considering the constitution or the degree of the disease itself. The impropriety of this method will be easily conceived, and it will require but little sagacity to discover, that no recipe in nature, no medicine whatever, will cure the same disease in all persons, even in the same country. To deny this is to prove all men are possessed of

the very same constitution, the same disposition, and that they are all attacked by disease in the same degree, which is truly absurd!

GENERAL CIRCUMSTANCES.

Name, age, occupation, residence present, ——— former.

GENERAL OBSERVATIONS.

On the habit.---Particular make, bulk, stature, complexion, skin---state of excitability---of the mind---of the nerves---of muscles in general---of the stomach, intestines, urinary organs---of the heart---of the arteries---of the lungs.

GENERAL QUESTIONS.

Present complaints?---how long subsisted? especially the manner of the attack, and order in which they appeared---any immediately preceding complaints of a different kind?---any former ailment?---any assignable causes?---customs and habits, with regard to, especially, food, drink, sleep, exercise, evacuations?---idiosyncrasies? with respect to food, drink, medicines.

GENERAL SYMPTOMS TO BE OBSERVED.

Pulse, especially its strength; frequency; quickness; order.---Alvine excretion---urinary excretion---appearance of the tongue.

PARTICULAR SYMPTOMS.

The particular state of the vital, animal, and natural functions; and the particular qualities of the several parts of the constitution; and of the excreted matters, must be observed more or less fully, according to the nature of the case.

OBSERVATIONS ON FEMALE SUBJECTS.

State of the menstrual excretion?---married or unmarried state?---impregnation; present or formerly?---lactation?

OBSERVATIONS ON INFANTS AND CHILDREN.

Dentition.---Former diseases; especially the small-pox, cow-pox, measles, hooping-cough.

BOOK VI.

HYGIENE;

OR,

REFLECTIONS ON THE NON-NATURALS;

COMPREHENDING AIR, MEAT AND DRINK, SLEEP AND WATCHING, MOTION AND REST, RETENTION AND EXCRETION, AND THE AFFECTIONS OF THE MIND.

"The whole man from his birth is a disease."

HYGIENE, strictly speaking, is a division of therapia, which treats of the diet, of the sick, and the non-naturals. Under this head, however, is introduced a prophylactic regimen, intended as a preventive against the yellow fever, and to preserve the lives of all persons visiting tropical climates, and as well for the valetudinarian as those who already are blessed with good health.

Hippocrates informs us, that, to preserve health, we ought not to overcharge ourselves

with too much eating*, nor neglect the use of exercise and labour. "Nature," says he, "is of herself sufficient to every animal; she performs every thing that is necessary to them, without needing the least instruction from any one how to do it." No doubt the great philosopher meant the rational beings of his time; such doctrine would certainly be misapplied to the luxurious animals of the present day, particularly our citizens.

What would a lusty alderman say to such reasoning, "to leave every thing to nature?" If there were fewer physicians, I admit, provisions would be considerably lessened in their

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* If a person should commit excess in eating, especially of high seasoned things, with rich sauces, a draught of cold water, acidulated with spirit of vitriol, will take off the sense of weight at the stomach, and assist digestion, by moderating and keeping within bounds the alimentary fermentation, and thus preventing the generation of too much flatus. The luxury of ices may be here of real service at the tables of the great, as producing similar effects with cold water acidulated. Persons in these circumstances ought not to lay themselves down to sleep, but should keep up and exercise, until they are sensible that the stomach is unloaded, and that they no longer feel any oppressive weight about the præcordia. It is safer to proceed to excess in drink than in meat; and if the debauch should create any extraordinary or distressing degree of pain or sickness, and a temporary fever should ensue, there are two ways of shaking it off, either to be in bed and encourage perspiration, or to get on horseback, and by brisk exercise restore the body to its natural state.

price, and their use become more general amongst the poorer class of our species; but from the present age of luxury, the court and the citizens of this great and voluptuous city, swallow up every thing with a voraciousness for which the citizens of London are pre-eminently conspicuous all over the world; and thereby follows the necessity of so many doctors, and their utility, in our metropolis.

Suppose for a moment it were so to happen, that an alderman, a worthy alderman of Candlewick, or of any other ward, after gorging himself nobly at a turtle feast, was the next morning to feel all the consequences of indigestion; or, from a too copious libation of the juice of the grape, bring on phrenitis; what would be the consequence if so great a man should be left to nature in such a sad situation?

O father of physic! there were no aldermen of Candlewick, Dowgate, or Aldgate, in thy days! no lord mayors' feasts! no turtle dinners at the London tavern! and no Deputy B—r—h, alias Colonel Pattepan, to fill up the interstices with puffed pastry!

The most general causes of disease mentioned by the great Hippocrates, are diet and air. Upon the former he has written very largely,

and has been a close observer of the quality and quantity proper for the purpose of retaining that invaluable blessing, health. The latter he also considered with great attention, and paid particular regard to the blowing of the winds, the irregularity of the seasons, and the influence of the planets over various bodies.

Respecting drink, he recommends wine and water in preference to all other, and I heartily coincide with him: his advice is, to mix it in equal quantity, which, he says, is the just proportion; by using which, the wine will expel what is hurtful to the body, and the water will serve to temper the acrimony of the humours.

Respecting the passions, he says, "we ought to pay great attention to what gives ease, and to what creates pain; what is easily supported, and what cannot be endured." He observes, that nothing should be done rashly, but to wait for nature's operation; and if it appears evident that she requires assistance, to let her be aided. "Follow nature," said this great man, "but by no means thwart her." Respecting the air or atmosphere, he is of opinion, the good and bad quality of this element does not depend solely on the *difference* of climates, but on the *situation* of every place in particular.

The earth is surrounded by a thin fluid mass

of matter, called the air or atmosphere*, which gravitates to the earth, revolves with it in its diurnal motion, and goes round the sun with it every year. This fluid is of an elastic or springy nature, and its lowest part being pressed by the weight of all the air above it, is pressed the closest together; and therefore the atmosphere is densest of all the earth's surface, and becomes gradually rarer higher up.

" The weight of the air at the earth's surface is found by experiments made with the air-pump, and also by the quantity of mercury that the atmosphere balances in the barometer, in which, at a mean state, the mercury stands 29½ inches high; and if the tube were a square inch wide, it would at that height contain 29½ cubic inches of mercury, which is just fifteen pounds weight; and so much weight of air every square inch of the earth's surface sustains, and every square foot 144 times as much, because it contains 144 square inches. Now as the earth's surface contains, in round numbers, 200,000,000 square miles, it must contain no less than 5,575,680,000,000,000 square feet, which being multiplied

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* In 100 parts of atmosphere there are 72 of azote, 27 oxygene, and one carbonic acid.

by 2160, the number of pounds on each square foot, amounts to 12,043,468,800,000,000,000 pounds, for the weight of the whole atmosphere. At this rate, a middle sized man, whose surface is about fifteen square feet, is pressed by 32,400 pounds weight of air all around; for fluids press equally up and down, and on all sides: but because this enormous weight is equal on all sides, and counterbalanced by the spring of the air diffused through all parts of our bodies, it is not in the least degree felt by us*.

"Oftentimes the state of the air is such, that we feel ourselves languid and dull; which is commonly thought to be occasioned by the air being foggy and heavy about us: but that the air is then too light, is evident from the mercury's sinking in the barometer, at which time it is generally found that the air has not sufficient strength to bear up the vapours which compose the clouds; for, when it is otherwise, the clouds mount high, and the air is more elastic and weighty above us, by which means

* If a person is asthmatic, he will find his disorder increase with the levity of the air; for since pure, dense, elastic air is alone capable of distending his lungs in respiration, it will be less capable of performing the same office when its weight and elasticity are decreased; and, consequently, the valetudinarian will find his difficulty of breathing increase in proportion.

it balances the internal spring of the air within us, braces up our blood-vessels and nerves, and makes us brisk and lively*."

A celebrated philosopher of antiquity assures us, that the only way to preserve good health (by those who already possess it), is, to avoid every thing bordering on rules; to deviate sometimes into slight aberrations from the strict laws of medicine, by varying our diet, drink, and exercise, mingling hardships with indulgence. To this military men in particular should pay great regard. The body, by inaction, or accustomed to stated quantities or uniform periods, certainly becomes easily disordered, consequently weakened; and every one knows that

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* It is a common error to conceive the air heaviest in foggy weather; the contrary is the fact, for the air is actually heaviest in fine weather. This error flows from mistaking the cause. When the fibres and nerves are braced and constringed by the great pressure of the air, the blood-vessels act with their full power and natural vigour, a proper velocity is given to the fluids, and a greater momentum to overcome obstructions in the capillaries: hence we find ourselves alert and light, and then fancy that the air is light also. On the contrary, when the pressure is very considerably lightened, the fibres are relaxed, the contracted force of the vessels diminished, a languid circulation ensues, obstructions, &c. happen; and produce agues, fevers, rheumatism, &c. in some; and in all a sort of indolence, or gloomy inactivity, and heaviness; consequences which we imagine to result from the heaviness of the air, when they in reality flow from its levity.

vigour and strength are acquired by exercise and labour. The necessity of riding or walking daily, is therefore evident: amusements of every description, as dancing, fencing, &c. may be practised with advantage: dry frictions with the flesh-brush, or coarse towel, may be substituted for the aged and infirm: the fluids may thus be accelerated in their motion through the smallest vessels, and muscular motion thereby generally excited. These rules are intended more for valetudinarians, or those that may expect disease, although not ill, than persons in good health; to correct morbific dispositions, and obviate various things that are known to be the remote and proximate cause of disease.

The ancients mention four temperaments, to one or other of which they refer every constitution.

I. Too much strength and rigidity of fibre, and too much sensibility.

II. Too little strength, and yet too much sensibility.

III. Too much strength, and but little sensibility; or,

IV. But little sensibility, joined to weakness.

Persons having these morbific dispositions are to be considered in a valetudinary state, and

should be particularly watched, lest they fall into the diseases allied to the different temperaments.

Those of the first temperament are always liable to suffer from continued fever, especially of the inflammatory species; they should, consequently, be extremely cautious in preventing the natural discharges from being checked. With respect to diet and exercise, they should be temperate, and drinking to excess religiously guarded against.

The antiphlogistic regimen, in case of illness, is, however, well adapted for persons of this temperament, especially blood-letting; but recourse should not be had to this evacuation unless in cases when absolutely necessary, lest, by weakening the system too much, it might induce the second temperament---a deficiency of strength, but a redundance of sensibility.

Of the second temperament. These persons frequently suffer much from spasmodic diseases, and are seldom free from a certain degree of irritability. Females of this temperament are very subject to hysterical complaints, not easily to be cured.

Persons of this constitution should pay great regard to the nervous system generally. Drastic purges, and strong emetics, are never to be

resorted to, nor is blood-letting admissible, but in cases of greatest emergency. Sudden changes with respect to diet and clothing are to be avoided. Tranquillity of mind should be attended to; and every thing in the way of diet rejected which is likely to engender flatus, or irritate the sensible membranes of the stomach and intestines, from whence the disorder would be communicated to the nervous system.

The plan to be adopted in these constitutions ought to be, to strengthen the solids by cold-bathing, the bark, chalybeate water, and exercise.

The third temperament, where there is an excess of strength, and but little sensibility. Persons of this constitution are seldom attacked by any dangerous disease: they, however, bear all kinds of evacuations well. Indeed, the antiphlogistic regimen may here be pursued to its full extent, and is in a certain degree sometimes requisite, to prevent an overfulness, which might determine to the brain or some other organ of consequence.

Persons of the fourth temperament, where weakness is joined to want of sensibility, are very apt to fall into dangerous diseases, in consequence of a defect of absorbent power, and from a debility in the circulation in general, by

which corpulency, dropsy, jaundice, and a depraved state of the animal fluids in general take place.

Persons of this constitution should be careful that none of the secretions should be interrupted, nor the natural discharges suppressed. Their diet should be generous, with cheerful wine and much exercise. Purging will, however, be often found necessary, and also the use of emetics, which, by agitating the abdominal viscera, will supply the place of exercise, prevent the stagnation of bile, the accumulation of nervous humours, which hinder digestion and clog the first passages. In these habits a free use of horseradish, mustard, and other stimulating things of this nature, will be found serviceable.

The general mass of fluids frequently accumulate beyond what is conducive to health, whence a plethoric state of the system arises, which often proves the source of different diseases. When the overfulness begins to produce languor and oppression, no time should be lost in reducing the body to a proper standard, by increasing the natural discharges, abridging the food, using more exercise, and indulging less in sleep. But in opposite circumstances, where the fluids have been exhausted, every

endeavour should be made to prevent further waste, by the use of strengthening stomachics, nourishing diet, and indulgence from fatigue of body and mind.

Vitiated fluids are to be considered as affected either with the different kinds of general acrimony, or as betraying signs of some of the species of morbific matter, which gives rise to particular diseases, such as gout, rheumatism, stone, scurvy, &c.

Where the fluids tend to the putrefactive state, which shews itself by rottenness of the teeth, sponginess and bleeding of the gums, a bloated look, and livid cast, the diet then should be chiefly of fresh vegetables and ripe fruits, lime-juice, wine in moderation, brisk exercise, and strengthening bitters.

Where acrimony shews itself by itching eruptions, uncommon thirst, and flushing heats, nothing will answer better than such sulphureous waters as the Harrowgate and Moffat in Britain, or the Lucan and Swadlinbar in Ireland; at the same time using a course of diet that shall be neither acrid nor heating. So far with respect to those kinds of morbific matter which do not invariably produce a particular species of disease. But there are others of a specific nature, some of which are generated in the

body spontaneously, and seem to arise from errors in diet, or other circumstances of ill management with respect to the animal economy; and hence it is sometimes possible, in some degree, if not altogether, to prevent the ill consequences. Thus, there are instances where returns of the gout have been prevented by adhering strictly to milk diet.

The rheumatism has also been sometimes warded off by wearing a flannel shirt, or by using the cold bath, without interruption.

The stone may be retarded in its progress, and prevented creating much distress, by the internal use of soap and lime-water, or by soap-lyes taken in milk or in veal-broth.

The putrid scurvy may be prevented by warm clothing and perseverance in brisk exercise, by drinking wine or cider, using lime-juice, and eating freely of such vegetable substances as can be had in those situations where this disease is most apt to shew itself*.

In constitutions where there is an hereditary disposition to the scrophula, if early precautions be taken to strengthen the solids by cold-

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* Lime-juice is a certain cure for the scurvy in all its stages, especially when used in conjunction with Port wine or Madeira, porter, oranges, &c. in large quantities.

bathing, a nourishing course of diet, and moderate use of wine, the acrimony which gives rise to the disease will probably be prevented from producing any very bad effects.

The other kinds of morbific matter, which are of the specific nature, are received into the body by infection or contagion. The infection of a putrid fever or dysentery, is prevented by immediately taking an emetic on the first attack of the sickness or shivering; and if it does not completely answer, let a large blister be applied between the shoulders: by this method, the nurses and other attendants on the sick in hospitals, have often been preserved.

The ill effects that may arise from the different species of saburra are to be obviated, in general, by the prudent administration of emetics, and abstaining from such kinds of food as are known to cause the accumulation of noxious matters in the first passages.

Crude vegetables, milk, butter, and other oily substances, are to be avoided by persons troubled with a sourness at the stomach: brisk exercise, especially riding, is to be used, and they are to refrain from fermented liquors: the common drink should be pure water, or water with a very little of some ardent spirit, such as rum or brandy. Selters and Vahls waters are to be drank medicinally; and aromatic bitters,

infusions, or tinctures, with the acid elixir of vitriol*, from ten to twenty drops, will be found serviceable, in order to strengthen the fibres of the stomach, and promote the expulsion of its contents, thereby preventing the too hasty fermentation of the alimentary mixture. In order to procure immediate relief, the magnesia alba, or creta præparata, will seldom fail; and the magnesia, as well as the other, may be made into lozenges, with a little sugar and mucilage; and in that form may be carried about, and taken occasionally.

In constitutions where there is an exuberance or stagnation of bile, and a troublesome bitterness in the mouth, it is necessary to keep the bowels always free, by taking occasionally small doses of pure aloes, oleum ricini, cream of tartar, or some of the common purging salts.

A redundance of bile may be certainly and

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* Acidum vitriolicum aromaticum, *Ed.* aromatic acid of vitriol, commonly called acid elixir of vitriol: in weakness and relaxations of the stomach, especially when there are continual retchings to vomit; in impaired constitutions, whether proceeding from irregularities, accompanied with slow febrile symptoms, or the consequence of suppressed intermittents, this will be found an invaluable medicine. The dose for an adult is from ten to forty drops, which may be taken in a glass of cold water once, twice, or thrice a day, at such times as the stomach is most empty. It may be advantageously used conjointly with the cortex Peruvianus: its usefulness is justly allowed both in covering the disagreeable taste of the bark, and in coinciding with its virtues. The spiritus ætheris vitriolici also deserves to be noticed.

effectually carried off by taking an emetic* at noon, and a calomel purge† the following morning. When this fluid is peccant in quality, the liberal use of vegetable acids, as lemons, oranges, &c. the Peruvian bark, and Port wine, will be found the best means of correcting it. Where there is a tendency to rancidity, all kinds of oily and high-seasoned things should be avoided: plain meat in these cases is best, and the drink should be cold boiled water.

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* *R.* Antim. tartar. - - - - - - gr. iij.
Aq. pur. - - - - - - - - ℥vj.
Spt. lavend. comp. gtts. - xij. M.

Capt. coch. mag. ij. stat et repetatur i. om. sem. h. donec vomitus urgetur copiose.

† *R.* Calomel. - - - - - - - - gr. v.
Pulv. Jacobi - - - - - - gr. iij.
Extract. colocynth. comp. gr. x. M. f. pil. no. iv.

Sumat cras mane.

Vomitting may be encouraged by drinking plentifully of thin water-gruel; and the intestinal canal well cleared by the free use of barley-water during the operation of the pills.—A tea-cup-full of camomile tea is particularly recommended to be drunk every morning by persons of bilious habit, especially those who are troubled with severe pains in their heads. The solution of arsenic is, however, often necessary for the cure of periodical headachs. The dose of Dr. Fowler's solutio arsenici, to adults, is from two to twenty drops in a glass of cold water, twice or three times a day. It sometimes vomits, gripes, and purges. The following is the doctor's formulæ:

R. Arsenici pulveris subtilissimi.
Kali præparati sing. gran. lxiv.
Aquæ distillatæ unc. - - iv.

These are to be put into a Florentine flask, and digested together in a sand-heat, till the arsenic is completely dissolved. Add to the solution, when cold, as much water as will make the whole a pint-filter.

BOOK VII.

PROPHYLACTIC REGIMEN;

OR,

RULES TO BE OBSERVED, AND STRICTLY ADHERED TO, BY ALL PERSONS VISITING TROPICAL CLIMATES, BEING A CERTAIN PREVENTIVE TO THE YELLOW FEVER.

CHOLERA, DYSENTERY, TETANUS*, &c.

"Every animal endeavours to preserve itself."

MEDICINE has long subsisted in the world: the principles of it are certain, and it has a certain way; by both which there has been found, in the course of many ages, an infinite number of things, the experience of which has confirmed its usefulness and goodness. All that is wanting to the perfection of this art will undoubtedly be found, if able men, and such as are instructed in the ancient rules, will make a further inquiry into it, and endeavour to

* When tetanus is not produced by punctures, lacerations, or other lesions of nerves in any part of the body.

arrive at that which is hitherto unknown by that which is already known. But all who having rejected the ancient rules, and taken the opposite way, yet boast themselves to be masters of this art, deceive "others, and are themselves deceived."

It is certainly characteristic of Englishmen to be prone to excess of every kind, particularly eating and drinking, without regard to health, climate, or any thing else whatever.

In our colonies in the West Indies we meet with many instances of this kind, although death stares Europeans in the face on their first arrival: it is, nevertheless, a well known fact, that the English in particular retain the full and free manner of living of their most robust ancestors. They imitate in this instance their mother country, and no lesson, however pregnant with good council, is sufficient to teach them abstinence.

In all civilized countries, subject to great heat, the natives are sober and extremely temperate. In the colder climates the reverse is found by experience to be the fact. However the inhabitants of northern climates may be affected by intemperance, especially in drinking, it is well known that, when in co-operation with heat, it will bring on premature decay of vigour in the system in all tropical climates,

without exception: and a full stimulating diet will produce most certainly the same effects, from its great irritation, on the system, the action being already too excessive, from the stimulus of heat; the economy of nature must therefore evidently sooner feel its baneful shock.

The nervous system becomes irritable and weakened, the circulation quickened, the progress of the fluids hastened to a septic tendency, a redundance of bile, and a disposition to spasmodic diseases and fever ultimately follow. To prevent as much as possible these melancholy effects, induced me first to think of laying these sheets before the public. I have endeavoured to be brief, although much is absolutely necessary on a subject of such importance to the lives of my countrymen.

In all hot climates, such as the East and West Indies, South America, &c. a particular regard should be paid by Europeans to regimen, particularly on their first landing; the contrary may cost them their lives: for this reason the following plan is laid down and minutely detailed, the which ought to be strictly pursued for at least the first twelve months after arrival in a tropical climate.

After landing, the first thing to be done is, to procure lodgings or quarters in an high airy

situation, to windward and distant from any woods, swamps, slaughter-houses, and marshes. The apartments should be well ventilated, kept perfectly clean, and frequently sprinkled with camphorated vinegar. All strangers in tropical climates should go to bed at ten o'clock, and rise at daylight: they should take a cup of camomile tea, or some other bitter*, particularly when obliged to reside in damp or marshy situations. Riding on horseback, or walking near the sea-side, before breakfast, is recommended; and bathing every second or third morning, as early as possible, may be had recourse to.

Riding on horseback is to be preferred to any other exercise, if attainable, as walking even a short distance, to persons newly arrived, is in general too fatiguing: gentle exercise, not-

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* Take of the best Peruvian bark, coarsely powdered, four ounces, orange peel one ounce and half, snake-root, coarsely powdered, one ounce, the best French brandy one gallon; infuse for four days, and strain for use. Half a wine-glass may be taken twice or three times a day, according to circumstances and dampness of situation. The above ingredients may be infused in water or wine; or the bark and snake-root may be made into an electuary with syrup of lemons, and used at pleasure. An infusion of the bark and camomile flowers, as common drink, is an excellent preventive. The Peruvian bark is most certainly the best antidote against putrid, intermitting, and other fevers, fluxes, &c. in unhealthy climates: about a drachm may be chewed daily by those who may prefer using it in this way; although either of the above infusions are to be more relied on.

withstanding, is indispensable, but in all cases it must be avoided in the heat of the sun. The action of the rays very often produce what the French call *le coup de soleil*, which frequently happens to strangers in the torrid zone: the use of umbrellas is therefore very requisite; so much so, that the natives themselves never ride out or walk without these useful appendages.

It will be easily understood, that these cautions are intended for private persons, and not for naval or military men: but to them, nevertheless, I would recommend a large brim hat, very high in the crown, and of the lightest materials, white, with green underneath, instead of the little paltry ridiculous leathern bag into which the heads of soldiers are thrust: report says, the invention is his royal highness's, the commander in chief; but whoever it may be that invented such a trapping, can have but little knowledge of military requisites in hot climates.

As the sun begins to be very powerful after seven o'clock A. M. every stranger should return to his quarters about that hour, and, if he pleases, eat some oranges or other fruit.

Breakfast at eight o'clock: take tea or coffee, with dry toast, or biscuit, or roasted yam; the latter particularly. The prickly yam, well roasted, with the addition of a little honey, is delicious, far, in my opinion, surpassing the

best bread and butter. A fresh egg or two may be taken at breakfast, but no butter or flesh meat: butter in all hot climates is rancid, and will consequently disease the stomach, by occasioning a redundance of bile. Avoid also using much new bread, as it abounds with too much alkali. If thirsty before dinner, pure water is the best beverage: lemonade, however, may be substituted.

A second breakfast, about twelve o'clock, is a very customary thing among the natives of tropical climates: if used at all by Europeans, particularly on their first arrival, it should be with great caution, as a debauch in eating is certainly much more dangerous in hot climates than the like excess in drinking, as has been shewn in another place. The water of newly gathered cocoa-nuts, that admirable antifebrile, may be drank plentifully before or between breakfast and dinner; and the jelly (the most exquisite delicacy) may be eaten liberally: and indeed almost every description of fruit, with dry biscuits, may be eaten with safety between breakfast and dinner. Melons, if made much use of, require pepper and salt. Spruce beer is also admissible, and even recommended; or a small quantity of Madeira, very largely diluted. Soda water should not be forgotten:---to half a glass of Madeira, or good

sherry, and a little sugar, add half a pint of soda water, recently uncorked; it will be found equal to champaign.

DINNER.

If the choice is left to yourself, dine at four o'clock P. M.: too much abstemiousness is at all times hurtful in every climate. Soup or sauce that has much grease or butter in it, should be very sparingly used in the torrid zone: salted meat should be also avoided; it induces scurvy in Europeans; although the slaves in the West Indies use it in preference to fresh provision, and are, notwithstanding, generally free from that loathsome disease.

Fresh fish, poultry, indeed fresh meat of any kind, may be eaten moderately, but with great plenty of vegetables. The best drink during dinner is plain water, which is by far the best beverage (and if cold boiled the better): a little Madeira may be added, or a very small quantity of old rum or good brandy, either will not be inadmissible. You may also, at or after dinner, take one large glass of porter, but not more for a considerable time after your arrival, unless indisposition may direct to the contrary. Cheese should not be eaten by strangers in tropical climates: a pint of Madeira, and a bottle of claret, should not be by any

means exceeded in the course of a day. Teneriffe is an excellent and pleasant wine, if preferred, and might supply the place of the other two; but, for my own part, I have found Madeira always agree best with me in the West Indies, and consequently never drank spirit.

Tea in the evening should be scrupulously avoided, and also supper of any description: dry toast, or biscuit, with coffee, may be substituted. Coffee, plentifully drank, tends to resist putrefaction; is an excellent stomachic, and frequently relieves the bilious headachs of hot climates.

SLEEP AND REST.

Never expose yourself to the effects of the night dew in the open air, through choice, after eight o'clock P. M.; nor be out of bed* after

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* Sleep is the great restorer of strength, for during this time the nutritious particles appear to be chiefly applied to repair the waste, and replace those that have been abraded and washed off by the labour and exercise of the day: but too much indulgence in sleep has many inconveniencies, both with regard to body and mind, as it blunts the senses, and encourages the fluids to stagnate in the cellular system, whence corpulency, and its necessary consequences, languor and weakness. The proper time for sleep is the night season, when darkness and silence naturally bring it on: therefore day sleep, in general, is not so refreshing; and to some people is really distressful, as creating an unusual giddiness and langnor, especially in persons addicted to literary pursuits. Custom, however, frequently renders sleep in the day necessary; and in those constitutions where it is found to give

nine, as by so doing you will have the double advantage of being out of the very heavy dew that falls there, and you will have sufficient time for rest before daylight. Your chamber windows should be kept nearly closed; allowing, notwithstanding, a little free air, but by no means to sleep in a current: should the usual perspiration be suddenly checked, it will doubtless produce fever, rheumatism, &c.: although I have frequently seen the natives, after having been many hours in a state of perspiration, and whilst in that state strip off to their wet shirts, and sit in the current of air until they were completely dry; and often many of them, whilst in a state of excessive perspiration, go into a cold bath.

Rain is peculiarly hurtful to European constitutions, although the natives are not in the least injured by it. It periodically rains twice a year, and particularly in those seasons which are about the middle of March to the middle of May, and middle of September to the middle

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real refreshment, it ought to be indulged.—With regard to the general regimen of diet, it has always been held as a rule, that the softer and milder kinds of aliment are most proper for younger subjects; that the diet of adults in health should be substantial; and persons should lessen the quantity of food, and increase that of their drink, who have passed the grand climacteric.

of November. These rains, which are periodically throughout the torrid zone, besides the many advantages they cause to the planters, are very useful in cooling the atmosphere. It, however, frequently rains so heavy in those seasons, that a person exposed to its force, is completely drenched in a few moments. The only remedy is, to change the dress as soon as possible; the person so wet should rub himself perfectly dry, and drink a glass or two of good old Madeira, or the Champaign mentioned in page 151.

The skin should be kept clean and cool by the use of the flesh-brush or a coarse towel, which ought to be used morning and evening, and the body well rubbed.

Sea-bathing, when practicable, should be had recourse to at least three times a week, and should be always performed in the morning before breakfast, and not to remain in the water more than from three to five minutes each time of bathing. When the sea cannot be had recourse to, the shower-bath may be tried: the cold bath, used in this way, will brace the solids, invigorate their vibrations, and accelerate the motion of the blood and other fluids. Bathing, notwithstanding, should never be resorted to unless the person is in perfect health. When the administration of water is thought abso-

lutely necessary in case of disease, it should be used as directed in the cure of fever.---*See Dr.* CURRIE *on Water.*

Cold-bathing is inadmissible in every case of unsound viscera or corpulency: where there is a determination to any particular part in unsound viscera, the bath will press the fluids thither by an additional force; and consequently vessels may be burst, or a discharge promoted to the diseased part, that might be carried off in some other way.

Lastly, I have to observe that the chambers of persons labouring under the fever, should not be entered but by as few as possible; the attendants only will be sufficient: at any rate, the sick person should not be approached so close as to be sensible of the fœtor of his breath, or the peculiar smell always emitted from the bodies of the sick in yellow fever. The wearing apparel of the sick in fever should not be touched but as little as possible, nor should persons sit on their bed-sides, as is too much the custom in all countries, without being of the least utility in any; particularly by persons who have nothing whatever to do with attendance on the sick: such persons should always keep at a distance from them; and even the attendants themselves should, if possible, always

keep to windward of the sick, as well as the convalescents, as the air may carry the effluvia to some distance, and may be blown upon them, occasioning immediate nausea, headach, &c. and the disease itself in a few hours.

I have seen several instances of this in the West Indies; let it suffice to mention one here, for the sake of brevity. Mr. Lyon Myers, from London, arrived at Barbadoes in perfect health about November 1803, by the Chesterfield packet, Captain Blight, in which I was myself a passenger. Mr. Myers settled in business as a merchant in Bridgetown, and continued well and hearty until the middle of the following month (December), when one day he called upon an acquaintance, who was then labouring under that dreadful malady, the yellow fever. Mr. Myers called on his friend on Saturday, late in the afternoon, and was never in better health; he sat on the bed-side of the sick man, and remained with him some time. Mr. M. returned home, and went to bed, observing that he felt a slight sickness at the stomach. Next morning (Sunday), before daylight, he complained of a violent headach; in the afternoon he was so very ill, that it was found expedient to employ a physician. Notwithstanding every medical aid, he

became delirious the next day, and died on the following. The physician that attended Mr. Myers is, I have heard, one of the most eminent in the profession in that country: I had not the pleasure of being known to him, but, from hearsay, little doubt remains on my mind, that every thing proper was done in his case. Mr. Myers' friend, from whom he caught the disease, as already represented, recovered nearly as quick as the other had paid the last debt to nature.

The first stage of the fever is always ushered in by an inflammatory diathesis, tending always to terminate in gangrene, nervous excitement, a debility of the whole system generally, and a rigidity of fibre.

Fulness and plethora should be scrupulously avoided, by having recourse to frequent saline purges. Ten or twelve drachms of natron tartarisatum may be taken in a dose: it answers two purposes, an excellent purge and a good diuretic. Or one drachm of the Epsom salt may be taken every morning, well diluted in cold water, and will require no peculiar regimen: or a glass of cold spring water, with a tea-spoonful of cream of tartar, will perhaps answer much better than the Epsom salt, or any other cooling medicine with which I am acquainted; and which

would in itself be found an excellent preventive during the dry season in tropical climates, if its use was to be persisted in regularly every morning.—*See Preparation necessarily to be observed when crossing the Atlantic Ocean.*

According to the celebrated Doctor Pearson, remittent fevers in hot climates are as bad as pulmonary consumptions in Great Britain;---remittent fevers, cholera, dysentery, enlargement of the liver, and a few others, are the only distempers in the catalogue of diseases in hot climates.

The yellow fever of the West Indies, he says, is only the remittent fever we are acquainted with;---the same cause that produces intermittents in this country, produces the remittent or yellow fever in tropical climates;---yellowness of the skin gives the name of yellow fever* to the remittent fever of the West Indies;---bile produces yellowness of the skin. Doctor Pearson does not consider the yellow fever contagious†: he calls it a bilious remittent, and

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* South Carolina has been visited by this disease upwards of fifty years ago.

† However the case of Mr. Lyon Myers may operate on the minds of my readers, in support of the yellow fever being of a contagious

advises following the same plan for prevention, as that laid down for intermittents.

From my notes taken at his lectures a few years ago, the learned doctor proceeds thus:--- "On the arrival of persons in the West Indies, let them clear their bowels with salts every four or five days for five or six weeks;---let them avoid fatigue---due time for rest---live moderate, and use vegetable diet---bathe in the sea---use flannel to keep them cool---change the flannel once a week at any rate---let it be washed two or three times, and then destroyed. If they have been used to drink much fermented liquor, let them moderate their dose---if much plethora, bleed---if the fever takes place, purge, bleed, and give the bark in large quantities---if the symptoms are very violent, throw in as much bark as you can, without waiting for any other previous step*. The rooms should be very airy, and the patient may have cold water thrown upon him, or wet cloths applied to his skin†.

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nature, I beg it to be understood that it is not meant to contradict the opinion of a physician of great eminence, and the first chemist of the age. I am ready to admit, that Mr. Lyon Myers might have been labouring under the disease in a slight degree when he called upon his friend; but confess it appears to me, nevertheless, a matter of too serious moment to pass unnoticed.

* An admirable advice.

† The warm bath deserves to be noticed; it is an excellent remedy in all spasmodic complaints.

" You may in the first instance give a vomit of ipecacuanha---vegetable diet is certainly preferable in the yellow fever, it is less liable to cause inflammation---arsenic* might be tried probably with success---calomel may be used, and it is thought rubbing in would answer better than taking it internally†---purging with calomel is customary in the West Indies‡."

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* See Dr. Fowler's solution of arsenic, and manner of administering it in periodical headachs, &c. book vi. page 144.

† When calomel is admitted in the yellow fever, it is usually combined with Dr. James's powders, and taken internally, previous to or in conjunction with the bark, until gentle ptyalism is produced, first having cleared the bowels by an enema: this is the general practice in the West Indies. In a second volume, ready for the press, the history of this plague—the remote and proximate cause, symptoms, and cure, are fully entered into; as well as cholera, dysentery, enlargement of the liver, tetanus, and other diseases peculiar to warm latitudes. A third volume will treat on modern chirurgery.

‡ Dr. Chisholm has given from a scruple to a drachm in a dose, with the best effects. To a man who afterwards recovered, he gave calomel, 64 grains by the mouth, 2040 grains by clyster, and 16 ounces of strong mercurial ointment rubbed into his arms and thighs, in all about 5704 grains, in the course of five days, before ptyalism could be produced. The cold bath was here employed. The patient recovered astonishingly fast. It should be, nevertheless, always kept in mind, that the exhibition of too great a quantity of mercury may bring on a hypercatharsis or a too abundant salivation, either of which may prove fatal.

BOOK VIII.

PHILOSOPHICAL OBSERVATIONS ON *CLIMATES.*

But where to find that happiest spot below,
Who can direct, when all pretend to know?
The shudd'ring tenant of the frigid zone
Boldly proclaims that happiest spot his own,
Extols the treasures of his stormy seas,
And his long night of revelry and ease:
The naked negro, panting at the line,
Boasts of his golden sands and palmy wine,
Basks in the glare, or stems the tepid wave,
And thanks his gods for all the good they gave.
Such is the patriot's boast, where'er we roam;
His first, best country, ever is at home.

GOLDSMITH.

"IF it be true," said Montesquieu, "that the character of the mind, and the passions of the heart, are extremely different in different climates, the laws ought to be relative both to the difference of those passions, and to the difference of those characters."

A cold air* constringes the extremities of the

* This appears in the countenance; in cold weather people look thinner.

external fibres of the body; this increases their elasticity, and favours the return of the blood from the extremities to the heart: it contracts* those very fibres; consequently, it increases also their force. On the contrary, a warm air relaxes and lengthens the extremes of the fibres; of course, it diminishes their force and elasticity.

People are therefore more vigorous in cold climates: here the action of the heart, and the re-action of the extremities of the fibres, are better performed; the temperature of the humours is greater; the blood moves freer towards the heart, and, reciprocally, the heart has more power. This superiority of strength must produce a great many effects: for instance, a greater self-confidence, that is, more courage; a greater sense of superiority that is, less desire of revenge; a greater opinion of security, that is, more frankness; less suspicion, policy, and cunning: in short, this must be productive of different characters. Put a man in a close warm place, and he will, for the reasons above given, feel a great faintness. If under this circumstance you propose a bold enterprise to him, I believe you will find him very little disposed

* We know it shortens iron.

towards it*: his present weakness will throw him into a despondency of soul; he will be afraid of every thing, because he will feel himself capable of nothing.

In cold countries they have very little sensibility for pleasure; in temperate countries they have more; in warm countries their sensibility is exquisite. As climates† are distinguished by degrees of latitude, we might distinguish them also in some measure by degrees of sensibility. The operas of England and of Italy are the same pieces and the same performers, and yet the same music produces such different effects on

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* This is my firm opinion of the greater part of the hot-bed-raised nobility of Great Britain.

† A climate is a space upon the terrestrial globe contained between two parallels, at such a distance from each other, that the longest day in one differs half an hour from the longest day in the other. The days are always twelve hours long at the equator, and thence to that parallel of latitude where the days are twelve hours and a half long, is the first climate; thence to the latitude where the days are thirteen hours long, is the second climate; and so on to the third, fourth, &c. climates. The breadth of these half-hour climates decreases as they approach the poles, so that a climate is scarcely four miles broad at the polar circles. Within these circles the breadths of the climates are not estimated by the increase of half hours, but by the difference of a month in the longest days. Riecioius, in his table of climates, considers the increase of days to be by half hours from twelve to sixteen hours; by hours from sixteen to twenty hours; by two hours from twenty to twenty-four hours; and then by a successive increase of a month for the duration of the constant appearance of the sun above the horizon.

the two nations; one is so cold and indifferent, and the other so transported, that it seems almost inconceivable.

It is the same with regard to pain, which is excited by the laceration of some fibre of the body. The Author of nature has made it an established rule, that this pain should be more acute in proportion as the laceration is greater: now it is evident, that the large bodies and coarse fibres of the people of the north are less capable of laceration, than the delicate fibres of the inhabitants of warm countries; consequently, the soul is less capable of pain. You must flay a Moscovite alive to make him feel.

In northern countries, we meet with a people who have few vices; if we draw near the south, we fancy ourselves removed from all morality. In temperate climates we find the inhabitants inconstant in their manners, in their vices, and in their virtues; the climate has not a quality determinate enough to fix them.

The heat of the climate may be so excessive as to deprive the body of all vigour and strength: then the faintness is communicated to the mind; there is no curiosity, no noble enterprise, no generous sentiment: the inclinations are all passive; indolence constitutes the utmost happiness; scarcely any punishment is so severe as the action of the soul, and slavery is more sup-

portable than the force and vigour of mind necessary for human action.

The Indians are naturally a cowardly people; even the children of Europeans born in the Indies, lose the courage peculiar to their own climate. But how shall we reconcile this with their cruel actions, with their customs, and penances so full of barbarity? The men voluntarily undergo the greatest hardships; the women burn themselves: here we find an odd compound of fortitude and weakness.

Nature having framed those people of a texture so weak as renders them timid, has formed them at the same time of an imagination so lively, that every object makes the strongest impression upon them. That delicacy of organs which renders them apprehensive of death, contributes likewise to make them dread a thousand things more than death; the very same sensibility makes them fly and dare all dangers.

In warm countries, the aqueous part of the blood loses itself greatly by perspiration; it must therefore be supplied by a like liquid: water* is therefore of admirable use. Strong

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* Monsieur Bernier, travelling from Lahor to Cassimere, wrote thus:—"My body is a sieve; scarce have I swallowed a pint of water, but I see it transude like dew out of all my limbs, even to my fingers' ends. I drink ten pints a day, and it does me no manner of harm."—BERNIER'S *Travels, tom. ii. p.* 261.

liquors, in too great a quantity, would coagulate the globules of blood that remain after the transuding of the aqueous humour.

In cold countries, the aqueous part of the blood is very little evacuated by perspiration; they may therefore make use of spirituous liquors without danger of coagulating the blood. They are full of humours; consequently, strong liquors, which give a motion to the blood, are proper for those countries*.

The law of Mahomet prohibited the drinking of wine; and the Carthaginians were also denied this useful beverage: such a law would be very improper for cold countries, where the climate seems to force them to a kind of national drunkenness.

Inebriation predominates over all the world in proportion to the coldness and humidity of the climate. Go from the equator to our pole, and you will find inebriety increasing together with the degree of latitude. Go from the same equator to the opposite pole, and you will find drunkenness travelling south†, as on this side it travels towards the north.

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* See note to page 124.

† This is seen in the Hottentots and the inhabitants of the most southern part of Chili.

BOOK IX.

L'intérêt qui aveugle les uns fait la lumiére des autres.
ROCHEFOUCAULT.

THAT almighty Being who created the great as well as the lesser luminary, to light both the day and the night, hath also given us various seasons for the better ordering and supplying his living creatures with the produce of the earth.

These seasons by us are called spring, summer, autumn, and winter. Spring begins on the day the sun enters the first degree of Aries, which is about the tenth of March, and continues till it enters the first of Cancer; when summer begins, and continues till the sun moves forward to the first of Libra; when autumn takes place, and continues to the first of Capricorn; at which time winter begins, and closes the year, revolved again to the first of Aries. These are the common definitions; but as they are to be confined to the seasons on the north of the equator, so it may more strictly and universally be said, that spring

commenceth when the distance of the sun's meridian altitude from the zenith, being on the increasing hand, is at a medium between the greatest and the least; summer, when the sun's meridian distance from the zenith is the least, and ends on the day when his distance is a mean betwixt the greatest and smallest; when autumn begins; and winter commenceth on the day when the sun's distance from the zenith of the place is the greatest, and ends on the day when its distance is at a mean between the greatest and the least.

These seasons under the equator return twice every year; all other places have but one winter in a year, which, as noted above, begins when the sun enters the tropic of Capricorn, in the northern hemisphere; but when it enters Cancer in the southern hemisphere, all places under the same hemisphere have their winter at the same time.

It cannot be for a moment doubted, that a complete knowledge of climates and seasons is very essential to medical practitioners in the army and navy; it will be impossible for them to perform their duties with any degree of credit if entirely ignorant of these subjects, especially medical topography. The general and the admiral, as well as the surgeon, should be well grounded in the arts and sciences,

very particularly geography*. The surgeon should make himself well acquainted with the productions of every climate, the quantity of caloric in the atmosphere, and its influence over the earth; the inhabitants mode of living, and even their laws, customs, and manners: all these often predispose bodies to constitutional diseases†.

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* Geography is a science, not only comprehending a knowledge of the terraqueous globe, or the earth and seas, in a general sense; but also including a particular knowledge of its several regions or countries, their boundaries, figures, mountains, mines, plants, and animals; likewise their climates, and distances from the equator; and lastly, their inhabitants, arts, food, commodities, manners, customs, religion, policy, &c. Next to the knowledge of ourselves, the knowledge of the world is essentially necessary, which can only be acquired by the study of geography.

† The diseases of troops might be in a great measure avoided, if we were to employ generals, admirals, and inspectors of hospitals of education; but, alas! in our country it is *interest* that makes the general. Low birth, and ignorance both as to military tactics and manners as a gentleman, appear to be recommendations; but I am convinced, NO MAN CAN BE TRULY BRAVE WHO HAS NOT RECEIVED A GOOD AND SOLID EDUCATION. We have a striking instance of this in General ———, the great favourite of a great personage. Every one knows the general's ignorance and mean extraction: a few years ago he was actually serving at Portsmouth in the capacity of a sergeant of marines, but see the reverse of fortune from the royal touch—this hero of the halbert quickly became a general of no small importance! and I believe a more strict disciplinarian, nor a bolder officer, on the parade at Portsmouth, did not exist. Perhaps a certain general officer who commanded some time at Halifax, and whose conduct appears to have been homogeneous, might be excepted. Be this as it may, Britain must blush for the

It would be ridiculous for any one to say that a disease, although it may arise from the same cause, should be always treated in the same manner all over the world. Experience has taught us, that, in many instances, the remedy that may succeed very well in England for the

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conduct of this marine mushroom general before the enemy in South America, and for the weakness of the chief's head in fixing on such a person to command an English army. Can this be attributed to a corruptible heart, or an imbecility of mind, the preferring unqualified friends, however unfit for military command, to men of talent, abilities, and great experience? If this plan is pursued, ruin to the British nation is inevitable. Another instance of depravity, avarice, and evident partiality, is well known in the case of the late inspector general of hospitals at Barbadoes, a mulatto. This person was ignominiously dismissed some years ago from the ordnance department, for peculation (to some considerable amount, and through the lenity of the board his neck was saved): he was, nevertheless, shortly afterwards appointed an hospital mate in his majesty's service, and sent out to his native island, where he shortly became an inspector general of hospitals (see the London Gazette, March 24th, 1804), at five pounds a day; and if report speaks truth, it was entirely the consequence of turtles and Madeira wine he sent to Europe to certain persons of notoriety, to whom one would have thought it impossible he could have ever gained admittance even by bribery. The black inspector, however, was at length fully detected in cheating the poor sick out of their allowance, and selling the hospital wine intended for their use, and converting the money to his own purposes, which had nearly created a mutiny in the island. It was at length thought prudent to dismiss him; but he is, notwithstanding, permitted to receive the half pay of £2 10s. a day! screened from justice by not suffering him to be brought to trial for the numerous offences he committed: and the officer who, for the good of his country, had actually established the charges against this inspector, was absolutely superseded, without any cause whatever being assigned!!! Justice, where art thou fled?

cure of a particular disease, often, and almost too often, fails in hot climates. The temperature of the climate being very different, as well as the productions of the earth, I must confess I cannot perceive why animals should not feel the alterations of the various climates as well as vegetables; climates having evidently great power over the latter, why not over the former? Are we not partly vegetable machines?—who can deny such a truth? why then should we suppose the climate has no influence on men, when we daily see its effects on all other animal and vegetable productions? Besides, nature points out to us very evidently, that disease is often peculiar to one climate, and indeed very rarely, if ever, met with in another*: for instance, fevers common amongst the East Indians, none of which bears the least analogy to the fever of the West Indies, or any other with which I am acquainted.

I must confess, nevertheless, that the black vomit of the Spaniards is sometimes met with in the torrid zone; and although it may be contended that it arises from the same cause, yet I will venture to pronounce that it cannot be cured by the same remedies in both climates.

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* This has been well proved, a few years ago, in Spain and the different ports of the Mediterranean.

However successful Dr. Watherstone* might have been at Chatham with his favourite remedies (water-gruel and blood-letting) in this disease, I am convinced the like treatment, if applied in the western hemisphere, would have killed all his patients.

The reader will not be displeased to have a description of those distempers, so swift in their progress, and too often fatal. Young practitioners should pay great attention to the endemics of hot climates, and make themselves well acquainted with universal topography: as it is so much the interest of our government to have troops and ships of war stationed in almost all parts of the globe, a perfect knowledge of the diseases of all countries cannot be otherwise than of essential benefit in assisting medical gentlemen in the cure thereof, as they will, during their career in his majesty's service, be obliged to visit those countries where disease frequently shews itself in the most formidable shape.

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* "It was the established practice of Naval Surgeon Watherstone on board the Argonaut hospital-ship at Chatham, for his assistants to open the veins of several patients at the same time (to save trouble, as it was termed), when the nurses, to whose sole care the patients were left, were desired to stop the bleeding, and to tie up their arms, when they (the nurses) thought a sufficient quantity was taken away; thus leaving a set of ignorant old women to determine the quantity, and attend to the after treatment."—*See* SOLON'S *Letter to the Lords of the Admiralty.*

Although Portugal is perhaps the most healthy climate in the world, yet it is not without its peculiar diseases, and consequently deserves attention, as our troops, and particularly our sailors, are frequently stationed off or near the capital: and although I practised nearly two years in a general hospital there, I only met with one principal disease; and that but very rarely proved fatal either to strangers or the natives. At its commencement it generally put on the appearance of typhus, but it was always accompanied with an inflammatory diathesis; which induced me to follow, in the first instance, the antiphlogistic plan; taking care, nevertheless, that the patient's strength was not suffered to be too much reduced; a rock upon which many young practitioners split.

Virulent opthalmia is often met with in our own country, but most commonly in hot climates: the brave fellows lately returned from Egypt can testify this truth with great certainty. It is truly astonishing, that the Italians, who in general have beautiful eyes and very sharp sight, are grievously troubled with this malady. The inhabitants of Florence (the ancient dukedom of Tuscany) seldom have their sight perfect after the age of twenty: the proverb, *Florentini ciechi*, or blind Florentines, is well known every where.

I must confess I cannot take upon me to determine finally, whether this evil may not be in that country an hereditary disease, but I am led to believe it most probably the effect of the climate, although it is most certainly the garden of the world*. I presume some one in Italy has written on this disease, but I lament to say that I have not seen any thing in that language on the subject; especially as it has been of late years so prevalent amongst ourselves, and so very obstinate in its cure.

Almost the whole of the British army that served in Egypt were in some degree troubled with this malady, and many having lost their sight altogether, induced me to apply myself to find out the particular cause. The situation and the quality of the soil soon struck my fancy: I perceived the inflammation was produced by the heat of the sun, and increased by the reverberation of the sand, so easily raised by every trifling breeze of wind in that open country, where the ground is all covered with it, the particles of which are scarcely visible but by the microscope; together with the westerly breezes, which blow very strong,

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* "Could nature's bounty satisfy the breast,
The sons of Italy were surely blest:
In florid beauty groves and fields appear;
Man seems the only growth that dwindles here."

producing a sort of whirlwind, enough to blind any description of animals: besides, the great heat always applied to the soles of the feet must be extremely hurtful to the sight.

This inflammation of the eyes once produced, will not fail to produce opthalmia in all its terrible shapes; and if not immediately attended to, almost always deprives the person of an eye, often of both. What is still more extraordinary, the Egyptians themselves are not free from it; nay, there is not any one in that country (a native) who has got both eyes good and clear. Perhaps the periodical inundation of the Nile, which makes the country all around so marshy (whereby it is impossible for any one to reside there and not to feel the pestiferous exhalations), may be a principal auxiliary cause of this plague, the opthalmia virulenta.

In my last passage from South America, with Dutch prisoners taken at Surinam, I witnessed a similar disease in our ship*, although arising from a very different cause. The whole of the troops (350 in number), a few days after having crossed the tropic of Cancer, were all attacked with a kind of opthalmia, which can only be accounted for from the sudden variation in the temperature of the atmosphere, and want of cleanliness, the men never having

* The Minorca.

washed themselves during the whole passage, nor was the vessel ever fumigated, or even scrubbed: they, however, all got well on arriving in England. Although foreigners complain of Holland being damp and very unhealthy, yet the natives, so far from finding any inconvenience arising from it, generally enjoy a good state of health.

I am persuaded, nevertheless, that marsh effluvia produce many diseases under different appearances, according to the climates, and yet unknown to us. To the dysentery which attacked the Prussian troops in Holland, we owe our defeat. Many other striking proofs might be recapitulated.

The celebrated Goldsmith admirably describes this country in the following beautiful little stanza:

To men of other minds my fancy flies,
Embosom'd in the deep where Holland lies.
Methinks her patient sons before me stand,
Where the broad ocean leans against the land,
And, sedulous to stop the coming tide,
Lift the tall rampart's artificial pride.
Onward, methinks, and diligently slow,
The firm connected bulwark seems to grow;
Spreads its long arms amidst the watery roar,
Scoops out an empire, and usurps the shore;
While the pent ocean, rising o'er the pile,
Sees an amphibious world beneath him smile;
The slow canal, the yellow blossom'd vale,
The willow tufted bank, the gliding sail,
The crouded mart, the cultivated plain;
A new creation rescu'd from his reign.

BOOK X.

Creatures of every kind but ours
Will comprehend their natural powers;
While we, whom reason ought to sway,
Mistake our talents every day.

SWIFT.

HERODOTUS* informs us, that the Jewish laws concerning the leprosy were borrowed from the Egyptians: in fact, the same distemper required the same remedies. The Greeks and the primitive Romans were strangers to these laws, as well as to the disease; the climate of Egypt and Palestine rendered them necessary. We find by the laws of the Lombards, that this disease was spread in Italy before the crusades, and merited the attention of the legislators.

It is now two centuries since a disease unknown to our ancestors was first transplanted from the new world to ours, and came to attack human nature even in the very source of life and pleasure.

The plague too is a disease whose infectious progress is astonishingly rapid. Egypt is its principal seat, from whence it spreads all over the universe.

* The father of history.

The Turks, who have no regulations respecting this disease, see the Christians escape this infection in the same town, and none but themselves perish. They buy the clothes of the infected, wear them, and go on their old way as if nothing had happened. The doctrine of a rigid fate, which directs their whole conduct, renders the magistrate a quiet spectator*; he thinks that God has already done every thing, and that he himself has nothing to do.

Many of our countrymen are affected, about the mouth of November, with a malady† peculiar to our climate (which our legislators seem to take but little pains to enquire into). It may be perhaps complicated with the scurvy, which in some countries especially renders a man whimsical and insupportable to himself.

The putrid and pestilential fevers of Grand Cairo prevail in March, April, and May, which the southerly winds render the warmest months in that country. The pestilential fevers,

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* Men are influenced by various causes, by the climate, the religion, the laws, the maxims of government; by precedents, morals, and customs: from whence is formed a general spirit, which takes its rise from these. In proportion as in every nation any one of these causes acts with more force, the others in the same degree become weak. Nature and the climate rule almost alone over the savages; customs govern the Chinese; the laws tyrannize at Japan; morals had formerly all their influence at Sparta; maxims of government, and the ancient simplicity of manners, once prevailed at Rome.

† Suicide.

also, are both epidemic and fatal at Alexandria, in autumn, after the recess of the Nile.

It is asserted by a man of some celebrity, that the true plague is not properly indigenous to Egypt, but is brought thither from Greece, Syria, or the more southern parts of Africa: yet he owns, that it sometimes begins there after extraordinary inundations of the Nile, when the water, extending itself beyond the usual drains, stagnates and forms putrid marshes.

Java, lying between five and ten degrees south latitude, is so near the line, that the seasons are not so properly divided into summer and winter, as into the dry and rainy. The rains begin in November and continue till May, during which time an immense quantity falls, which makes the air of the country unwholesome. Batavia, the capital, being surrounded by marshes and canals with stagnating water, makes it the grave (as justly said by Captain Cook) of European navigators: the plague, nevertheless, is unknown there. It is to be considered, that when the sun is most vertical in that country, it is almost clouded; by which means, and the continual interchanges of the sea and land breezes, the heat of the air is moderated, and its stagnation in a great measure

prevented. The diseases peculiar to this climate are, cholera, dysentery, and continued putrid fever.

The British settlements on the Gold Coast in Guinea, are as near the line on one side as Java is on the other. Cape Coast Castle, lat. 4. 56. N. long. 0. 10. W. is the principal fortress.

The African company employ a number of officers and servants on the Gold Coast. A committee, consisting of nine, are nominated annually, who have all the appointments, civil and military, at their disposal. Their medical staff is well regulated, and surgeons will not meet any where with more liberality, honour, and encouragement, than from the committee* of merchants trading to Africa. All communications should be addressed to their secretary, John Owen Parr, Esq. a gentleman conspicuous for urbanity.

The rainy season at the Coast begins about

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* The committee nominated for the present year are the following gentlemen, who are of high respectability:—LONDON.—Anthony Calvert, Esq. N. B. French, Esq. and Thomas Norris, Esq.——BRISTOL.—John Taylor Vaughan, Esq. John Nicholas, Esq. and John Noble, Esq.——LIVERPOOL.—George Barnes, Esq. Simon Cock, Esq. and James Barnes, Esq.

the end of April, and continues until about the middle of June: during that great rain the weather is cold for that climate, and the air moist, from the exhalation of so much rain; during which time remitting and intermitting fevers, with quotidian paroxysms, are epidemic. These fevers, like them of Java, are accompanied with great thirst, a nausea, and inquietude; frequently with vomitting and purging of putrid bile; nor do they usually abate until all that bile is evacuated. If a discharge of this humour is not made in time, the distemper assumes a continued and malignant form, the pulse sinks, and a delirium comes on, which is almost always fatal. Dysentery is likewise frequent at this season, and too often fatal. The crews of ships at anchor off the coast, are as liable to these diseases as those on shore, unless they keep out at sea beyond the limits of the foggy air; in the latter case they are never affected.

The sea and land breezes here, with the haziness of the weather during the hot season, seem to be of the same use as at Java, for preventing pestilential diseases.

The fevers of the West Indies, although of a putrid nature, never turn out a true plague; because the same sort of breezes prevail there,

which may prevent that degree of stagnation and corruption of the air which is necessary to produce it: but the great heat, and the atmosphere being loaded with putrid exhalations, remitting and intermitting fevers, with dangerous bilious vomittings and dysentery, become epidemic throughout June, July, and August. April and May are always rainy months in Jamaica, and the diseases* rage most after the wettest seasons. The natives, as well as strangers, are liable to these maladies, but the latter in a more putrid and dangerous degree†. Whenever the greatest causes of putrefaction exist, there also will be seen the greatest number of remitting, intermitting, or bilious and putrid fevers, with cholera and dysentery.

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* *The Buccaneers' method of curing their sick.*—In the Charibbee Islands in the West Indies, the natives were used to cut their prisoners of war in pieces, and laid them on hurdles, with fire underneath, which they called *buccaning*, that is, roasting and smoking together: meat thus prepared is certainly very delicious, has an excellent taste, the vermil colour of rose, and a charming smell, which keeps good for many months. The place where they dress their food they call *Buccan*; and when they have many sick, they are sent to those places to eat the buccaned meat, that they may recover.

† The mortality in the army commanded by Sir Charles Grey, in 1794, in the West Indies, was so great, that in less than seven months he lost upwards of 200 commissioned officers, and nearly 6000 non-com-

These diseases also are to be met with in the United Kingdom as well as in hot climates, and certainly originate from the same causes (putrid exhalations and a too abundant secretion of bile*); but the dryness of the soil, and its freedom from marshes, the constant perflation, and the moderate heat of our summers, gene-

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missioned officers, rank and file. The army commanded by Sir Ralph Abercrombie shared a like fate: from 1796 to 1799, this plague (the yellow fever) carried off nearly 14,000 brave fellows, viz. two brigadier-generals, twenty lieutenant-colonels, twelve majors, sixty-six captains, one hundred and sixty-three lieutenants, fifty-eight ensigns, eleven adjutants, nine quarter-masters, fourteen regimental surgeons, seventeen assistant surgeons, rank and file 13,437. In the whole upwards of 20,000 of our countrymen; which, if only valued at thirty pounds per head, is a loss to the state of £600,000, for a few paltry islands, much better in the hands of the natives.

* The bile is one of those humours which it is essential to know, on account of its influence and effect both in the states of health and disease. This fluid is a bitter yellowish juice, of a smell somewhat like musk; secreted in the glandular substance of the liver, and conveyed by the biliary ducts, through the ductus hepaticus, into the ductus communis choledochus, from whence it is, in part, carried into the intestinum duodenum. The other part regurgitates through the cystic duct into the vesica fellis, or gall-bladder. Thus there are two kinds of bile: the one, which flows from the liver into the duodenum, is termed hepatic bile; this is thin, inodorous, and slightly bitter: the other, which regurgitates from the hepatic duct into the gall-bladder, and there becomes thicker and more acrid, is called cystic bile. Bile is both useful and necessary for the preservation of life and health: there is no animal or insect destitute of a bilious humour. The bile is a genuine medicine of nature's own elaboration: it is a fluid of great importance with regard to the good or ill habit of the

rally render those diseases mild, unless when the seasons are extraordinarily hot and close; then indeed they sometimes become epidemic throughout the latter part of summer and autumn†.

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animal: it extricates the chyle from the chyme, excites the peristaltic motion of the intestines, and prevents the abundance of mucus and acidity in the primæ viæ. A redundance of bile occasions many terrible diseases, which, according to the heat of the humours, their acrimony, or vent given to them, will appear in the shape of a remitting or intermitting fever, cholera, or dysentery. Too great an evacuation of bile, either upwards or downwards, robs the chylification of its main instrument: hence it prevents digestion, secretion, excretion of the fœces, and produces an acid temperature, coldness, weakness, paleness, and swooning. If the bile be prevented in its discharge into the intestines, it produces jaundice. All the acids decompose bile, and disengage an oily substance, which rises to the top. The salts afterwards obtained by evaporation, have soda for their basis; which shews that the bile is a true animal soap. The bile or gall is an excellent vulnerary externally applied: internally taken, it is a good stomachic, and one of the best deobstruents the art of medicine possesses. This kind of remedy deserves the preference, as being more analogous to the constitution; and bile is a more proper medicine when the digestion languishes, or the viscera of the lower belly are clogged.

† *Dr. Huck's method of carrying off the bile in the bilious fever.* —The doctor, after V. S. and in the first remission, gave five grains of ipecacuanha, with half a grain of tartar emetic, which was repeated in two hours, restraining the patient from drink before the second dose was administered. If after two hours more the operation either way was small, a third dose was given with good effect. When the doctor's object was more to purge than vomit, he made an eight-ounce decoction with half an ounce of tamarinds, two ounces of manna, and two grains of emetic tartar; and dividing this into four parts, he gave one every hour, until the intestines were cleared.

BOOK XI.

If honour calls, where'er she points the way,
The sons of honour follow and obey;
If need compels, where'er we are sent,
'Tis want of courage not to be content.

CHURCHILL.

THE diseases of soldiers in all climates may be in a great measure avoided by a wise general, whether in camps or garrisons.

Encampments on the banks of great rivers, and where the ground is dry, are always healthful; because, in the hot season, situations of this kind have a stream of fresh air from the water, which carries off the moist and putrid exhalations so baneful to the health of troops. On the other hand, next to marshes, the worst encampments are on low grounds, close beset with trees; for then the air is not only moist, but hurtful in itself. Camps are rendered unhealthy, however well they may be situated, owing to the putrid effluvia arising from the rotten straw and privies of the army: the best and only remedy is, to change the ground, if consistent with the military operations; where this cannot be done, clean straw should be procured, if possible, for the soldiers, and a

layer of earth daily put over the privies*, and well covered over when it will be found necessary to substitute others.

The beginning of every campaign is always most unhealthy: after the first fortnight or three weeks the sickness continues to decrease, and the weather getting daily warmer, this healthy state continues throughout the summer, unless the men get wet clothes or wet beds; in which cases dysentery will shew itself in proportion to the preceding heat. The most sickly part of the campaign commences about August, when the days are hot, and the nights cold and damp, with fog and dew: then, if not sooner, the dysentery prevails; and although its violence is over by October, yet the remitting bilious fever † getting ground, continues throughout the rest of the campaign, and never entirely ceases, even in winter quarters, until the commencement of the frost.

From the beginning to the end of autumn, soldiers, encamped in damp situations, are very liable to suffer severely from contagious diseases. The army, if possible, should always return to winter quarters by the latter end of

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* The privies should always be made to leeward of the camp.

† In the West Indies called yellow fever.

October; and if the men are well supplied with clothing, particularly strong shoes and great-coats, good provision and drink, fuel, &c. little be apprehended from disease.

The bites and stings of animals and insects are other evils soldiers are likely to meet with. They are numerous; I shall only speak of a few of the most troublesome in hot climates. The disease brought on by the poison of the tarantula, and the only supposed cure (music), being well known, I shall not say more of it here. I cannot, however, pass unnoticed a very peculiar troublesome insect always found in abundance in the West Indies. It is so extremely small as not to be seen without the assistance of a microscope, and always attacks the feet and joints; it introduces itself imperceptibly into the flesh, where it shortly makes a nest: and what is more wonderful, is its prolific quality; in about twenty-four hours millions of its own species are generated within an elastic bag, forming a deep hole in a complete circle: it is, however, usually extracted in a few hours after its lodgment, and before it has time to more than insinuate itself. The negroes are very expert in performing this operation, and seldom give any pain.

It is very astonishing the natives will not have

it removed immediately after discovering it has entered their feet, but, on the contrary, appear to feel a peculiar pleasure in its gnawing for a certain space of time, when at length they have it extracted. Many negroes and other careless beings, notwithstanding, lose their toes, nay their limbs, through neglect in removing these insects in due time: mortification takes place, and deaths sometimes happen.

The bite of a species of lizard, and a great variety of serpents, is mortal, unless immediately attended to. There are many others that could be enumerated, but will be soon known on arrival in warm latitudes. The moscheto and centiped are troublesome, but their stinging is seldom dangerous.

In Calabria and Sicily, a serpent, called acontias, is frequently met with, called by the Sicilians *saeltone*, from *sagitta* an arrow, by reason of its flying at passengers like an arrow, and generally winds itself up a tree to fly with greater force. The island of Rhodes is notorious for a large species of this animal, measuring from twenty inches to two feet long, and about two inches in circumference; of a grey colour, spotted all over with black spots encircled by white.

BOOK XII.

———————La sincerité est une ouverture de cœur; on la trouve en fort peu de gens.

ROCHEFOUCAULT.

THE learned Dr. Mead, a sincere friend to truth, has made it appear, in a manner equally profound and intelligible, that the sun, as well as the moon, occasions in human bodies different changes and regular vicissitudes.

The influence of the celestial bodies cannot be denied; it being already so very clearly demonstrated, puts it beyond all manner of doubt. The flux and reflux of the waters, the rains, the winds, and various meteors of the atmosphere, when our two first luminaries are in conjunction, is a very unquestionable proof of their power over the earth. The action of the heat on our earth is clearly the cause of the exhalation of the vapours; their condensation in falling is owing to want of heat or rarefaction, and consequently to their specific gravity. *The diseases peculiar to all climates are owing to this phenomenon.* According to its nature and dis-

position, is another doubtless reason of its influence on the human species. How frequently in the hot climate of Barbary, and in some of the islands in the Mediterranean, the field labourer falls a victim to the caloric in the atmosphere! How often have we heard of some peculiar disease, never before known, spring up all at once, and attack and depopulate a whole town, perhaps an entire country! in consequence, no doubt, of *putrid exhalations*, and the which I conceive to be *the principal cause of all contagious diseases.* Pestilential vapours always retain the principles of those matters from which they have been exhaled; and, consequently, will occasion baneful effects when they come in contact with new bodies. As soon as the atmosphere containing these noxious particles, loses its elasticity through the want of rarefaction, by its condensation it becomes heavier, and is no longer able to sustain the vapours with which it is impregnated; they must fall, and we must of course expect the consequences peculiar to their qualities*:

* A true distillation is carried on every where at the surface of our globe. The heat of the sun raises water in the form of vapours; these remain a certain time in the atmosphere, and afterwards fall in the

and consequently various diseases are thus received by the absorbents. The necessity then of keeping out of the night dew in the West Indies, and indeed all tropical climates, must appear obvious.

The planet which we inhabit is completely surrounded with elements, and on its surface are contained the mineral, the vegetable, and animal kingdoms. The mineral, or crust of the earth, gives life to the vegetables which adorn it, and the animals are sustained by the vegetables.

The continent is surrounded by the sea, which takes up greater part of the earth's surface: the exhalations from which, and other waters and marshy grounds, collected, form what are commonly called clouds, which, condensed in the lower regions of the atmosphere, supply the earth with rain; but mountainous parts, which are so much more lofty, by attracting the clouds, have consequently a larger proportion of water, and are the mothers of all springs.

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form of dew, by simple refrigeration. This rise and fall of humidity, which succeed each other, wash and purge the atmosphere of all those particles, which, by their corruption, might render it infectious; and it is perhaps this combination of various miasmata with water, which renders the evening dew so unwholesome.

Those springs gradually growing larger, become at length rivers; the which, after a conflux of many of them, deposit their united stores in the sea, thus completing an *evident circulation;* as is the *case* in all the *animal* and *vegetable creation.*

Exhalations from the sea, &c. again take place, the clouds are again formed, and deposit their contents, as before mentioned. The water returns to where it was first drawn, that it may again take the same tour.

The waters of the ocean consist of many saline, earthy, aërial matters, capable, when even partially decomposed, of phlogisticating or vitiating the vital air of the atmosphere. To the mutual action of these two elements on each other, the sea owes its turbulence and its waves: to the diurnal motion of the earth, and the course of the sun in the zodiac, we are chiefly to ascribe the changes of the atmosphere. These causes combined produce tempests, hurricanes, &c. and probably vitiate the air at sea, although supposed to improve it at land.

According to the experiments of Dr. Priestley, pure air is considerably depraved by agitation in the purest water; and that vegetation is one of the means employed by nature to purify air tainted by respiration, putrefaction, or

by combustion. It may then be fairly enough contended, that the scurvy and putrid malignant diseases may be ascribed to the sea as to the land air. The inhabitants of the sea consume an incredible quantity of vital air, which they imbibe by means of their gills from the sea-water; and whatever decomposition it undergoes in consequence of this extraordinary process of respiration, or by what process this principle is again restored to the water, for the maintenance of the lives of its numerous inhabitants, is still to be ascertained.

Speaking of climates, it is to be presumed that a relation of a few medicinal waters found over Europe, &c. will not be unacceptable. It is, however, far from my intention to offer any thing like a dissertation on this subject; my view is, to indistinctly enumerate some of them, with their peculiar qualities, as far as they relate to medicine: I think, nevertheless, that this is an extensive and fit field for the research of the philosopher.

The principal medicinal waters in England are too well known to require description here. Not far distant from Edinburgh there is a spring of water, the surface of which is covered by a kind of oil or bitumen, and is used by the natives with success to cure chilblains, and a

disease (the itch) with which all the Scotch are so frequently tormented; indeed it seldom happens that the whole of a family are ever free from this malady, from the peer to the laird*, downwards to the Highland piper: I might have in truth included the generality of the inhabitants. This disease, and another equally peculiar to all Scots†, seem to be hereditary amongst them.

This is not the only kind of medicinal water found in Scotland; it abounds with many mineral waters, particularly those of Kinghorn and Balgrigy in the province of Fife, and those of Aberdeen and Peterhead, many of which do not yield to those of Pyrmont in Germany, or to the celebrated waters of Spa in the bishopric of Liege. The most esteemed waters in Europe‡ are the pepper-baths on the Alps: they have been the subject of so many treatises, that it is almost useless to say any thing of them here. The place from whence they spring is scarcely accessible to the sunbeams, and to no men but those of the greatest courage. Their singularity

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* The title of a gentleman farmer in Scotland.

† Sibbens.

‡ The medicinal waters of Jamaica in the Western Hemisphere, and of several islands in the Mediterranean, are not inferior to many of the most renowned in Europe.

to all others is, that they commonly break forth in the month of May, and desist in October.

The mineral waters of Bourbon and Montpelier in France, are of the same medicinal nature: the quality of the former has been known since the time of the Romans; and there is no one unacquainted with the latter; almost all travellers have spoken of them, and they have not escaped the notice of the celebrated Dr. Young, in his admirable Night Thoughts.

Besides England, Scotland, Ireland*, Italy, Hungary, France, and Germany, Naples deserves to be particularly noticed: this country, which has been properly called the earthly paradise, is justly celebrated for medicinal waters, as well as for every comfort the human species can wish for. There are many of these springs in Naples itself, and several in the environs. At the summit of a hill near Castelamara, about 15 miles S. E. of Naples, lat. 41. 40. N. long. 14. 35. E. there are three medicinal springs, within twelve inches of each other, the waters of which are quite different,

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* The garden of the British Isles, between 51 and 56 degrees of N. lat. and between 5 and 11 degrees of W. long. The Irish are humane, hospitable to excess, just, honourable, and brave.

but all of them celebrated for the cure of various diseases.

The lake of Mexico also furnishes us with a phenomenon wonderful and surprising: the water of one part is salt, the other fresh and sweet, and in the center is a spring of hot water, which is much esteemed for the cure of different diseases.

THE END.

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